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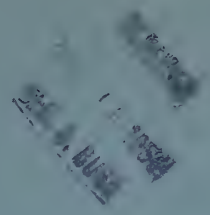


REPORT

of the

SAN FRANCISCO WATER DEPARTMENT

Leon D Burr

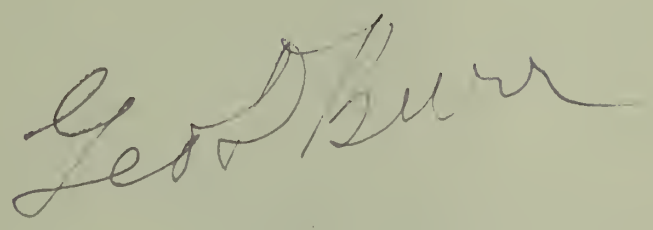
FISCAL YEAR
1953-1954

G. W. PRACY
General Manager and Chief Engineer

REPORT

of the

SAN FRANCISCO WATER DEPARTMENT



FISCAL YEAR
1953-1954

G. W. PRACY
General Manager and Chief Engineer

SUNSET SUPPLY LINE
Construction through close quarters in Burlingame

SAN FRANCISCO WATER DEPARTMENT
G. W. PRACY
General Manager and Chief Engineer

This fiscal year 1953-54 completed twenty four years of successful operation of the Water Department by the City. During that period there have been many changes in the system and its operation.

These successful years have been due in large part to the understanding cooperation of the City officials, who have made possible bond issues as needed, appropriated funds for new and replacement facilities, approved policies and projects and rates which have maintained us in a self supporting position. As the demand for water is constantly increasing in a growing city a continuation of this co-operation is necessary if we are to continue to provide capacity needed to keep up with growth.

Following this introduction is a curve showing demand (consumption) since 1885 together with probable future consumption and the basic facilities provided to meet this demand.

While actual consumption varies considerably during monthly, weekly, daily and even hourly intervals of time the figures used in the graph are the totals for one year divided by the number of days in that year. No water facility is capable of operating at its capacity for extended periods hence the delivery in million gallons per day over a year's time is less than the capacity of the transmission lines. This requires larger transmission capacity, greater local storage for reserve use, duplicate facilities and cross connections for flexibility of operation.

That part of the Sunset Supply Line from Burlingame to Sunset Reservoir is now completed. Construction of the Sunset Supply-Crystal Springs Pipeline from Crystal Springs Dam to Hillsborough Bridge is under way. Plans are being prepared for that section of the Sunset Supply Line between Hillsborough Bridge and Burlingame as well as the San Andreas Branch.

Present plans are to complete the first basin of Balboa Reservoir in 1955-56 and the south and last basin of Sunset Reservoir in 1957-58. These two reservoir basins will add approximately 165 million gallons to our City distribution system storage capacity.

$$\begin{array}{r} 4,378 \\ 828 \\ \hline 365 \overline{)\,5,206\ \text{mg}} \\ 3\,65 \\ \hline 1\,56 \\ 1\,46\,0 \\ \hline 960 \\ 730 \\ \hline 230 \end{array} \qquad 14.3\ \text{mgd}$$

$$\frac{6.5}{124.9 - 6.5} = \frac{6.5}{118.4} = 5.5\%\ \text{increase}$$

124.9 mgd; total consumption
90.1 " for HHWS

34.8 mgd from local sources
14.3 mgd drawn from prior years' storage.
20.5 mgd production during 1953-54 for local watersheds.

With the completion of Summit Reservoir we will have storage capacity within the City for approximately 3½ days. City consumption at the present yearly average rate of 90 million gallons per day. On completion of the Balboa and Sunset reservoir basins, one basin at each site, the total capacity will increase to approximately five days' supply at the same rate of consumption. However, at the rate of demand for the month of June 1954, 157.3 million gallons per day, the storage capacity would provide for approximately three days' demand.

The Corporation Yard at 639 Bryant Street is entirely too small for the needs of the Department and it is anticipated that a more efficient layout of buildings on a larger site may be constructed during the 1956-57 fiscal year. The present savings in costs and time which are obtained in our present Yard will be much greated with a larger and more efficient layout of buildings and grounds.

These projects are set up in detail in the Capital Improvement Program for 1955-56 through 1960-61, the cost for the next six years being approximately $16,900,000. The amount of income available for these additions, betterments and replacements, based on present water rates, is anticipated to be inadequate by approximately $500,000 for financing those projects during the six year period.

The annual report of this year follows the same general outline of previous years in order to give continuity of record and to provide ready reference comparison of operating results from year to year. Following this forward, a more detailed description is provided of the Department's operations during the year ending June 30, 1954, which in turn is followed with an appendix and a list of Organization and Personnel.

For the second year rainfall was below normal in the Department's local Watershed Areas and for the first time in four years, rainfall was below normal within the City. This reduced rainfall was reflected in a reduction in storage of 828 million gallons in City and Peninsula reservoirs and 4,378 million gallons in Calaveras Reservoir during the fiscal year. This decrease occurred even though the maximum quantity possible was drawn from Hetch Hetchy during the year, averaging 90.1 million gallons daily.

Water consumption for the entire system during the year ending June 30, 1954 averaged 124.9 million gallons daily, an increase of 6.5 million gallons daily over the preceding year. Of this total, 89.7 million gallons daily were used in the San Francisco consumption area and the balance of 35.2 million gallons daily was used in the suburban consumption area.

The peak 24 hours demand on the system, occuring on June 21, 1954 was 197.0 million gallons, as compared to the previous all time peak of 166.8 million gallons on June 24, 1953.

The low 24 hour demand on the system, occuring on November 22, 1953, was 88.0 million gallons as compared to the 1952-53 low of 83.7 million gallons on December 25, 1952.

The month of June 1954, had the highest daily average demand of any month during the year averaging 157.3 million gallons per day as compared to an average 140.2 million gallons per day in June 1953.

A review of the consumption in City and Suburban consumption areas for the past five years shows an increase in the former of about 8% while in the latter it is nearly 80%. This increase points up the tremendous growth in population and industrial developement in the suburban areas served by the San Francisco Water Department. This, of course, increases our responsibility and requires continuous studies of the system to anticipate additional demands and provide the facilities to meet them.

Water sales for the year, including municipal non-pay accounts, amounted to $12,817,945, an increase of $313,062, or 2.5 per cent over the previous year. Accounts within the city limits increased by $83,661, making a total net sales within the City of $9,786,704, or 76 per cent of the department's total sales. Suburban net sales increased $229,401, making a total suburban sales of $3,031,241, or 24 per cent of the department's total net sales.

The number of active consumer accounts increased from 150,089 on June 30, 1953 to 151,114 on June 30, 1954, a gain of 0.7% over the year.

Accounts determined to be uncollectible totaled $5,648, an increase of $1,778 over the preceding year.

On June 30, 1954 the total number of water meters in service was 155,249, an increase of 1,154 during the year. (Metering of the entire system was completed in 1918).

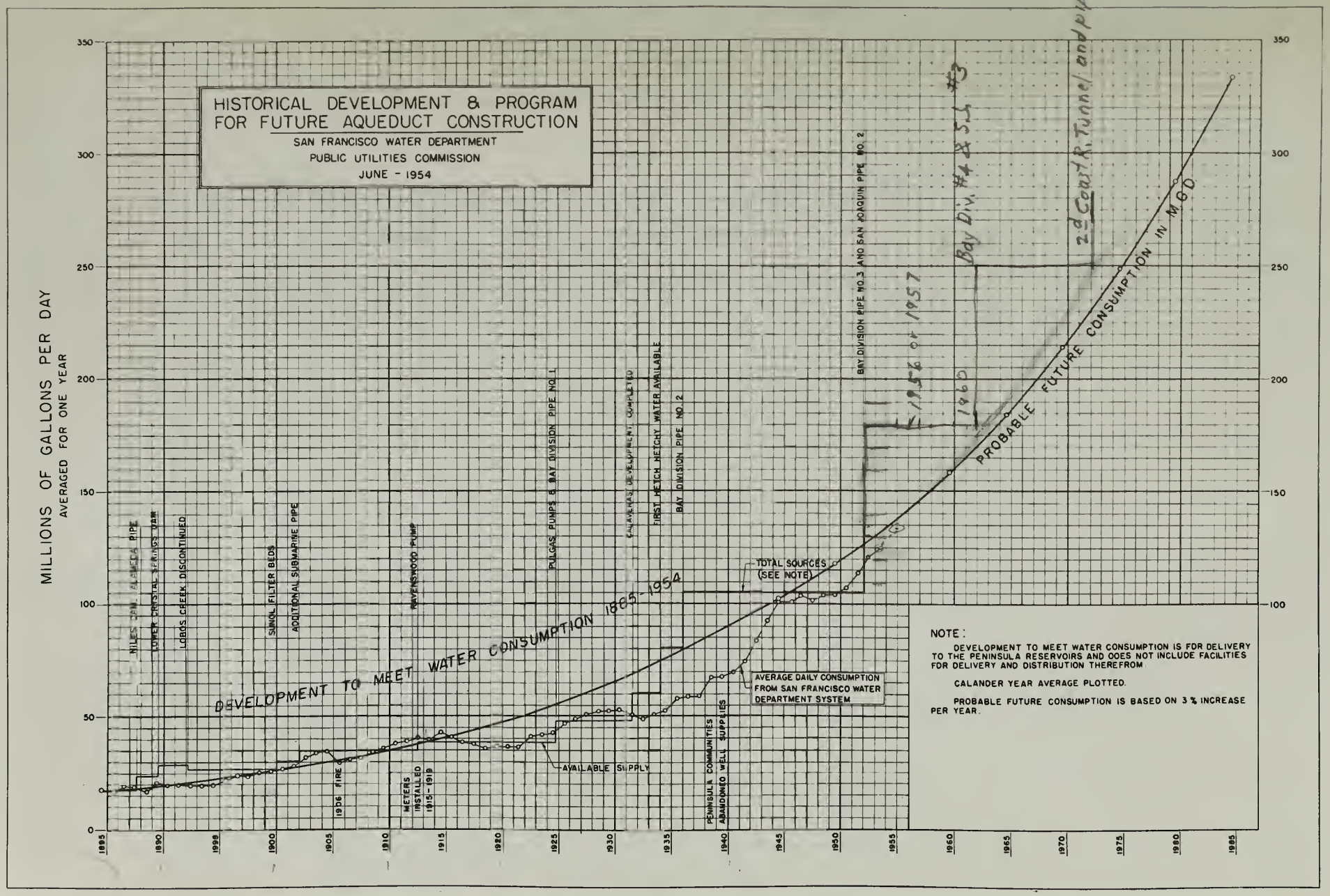
Personnel employments amounted to a total of 516 on June 30, 1954, including 52 temporary employments.

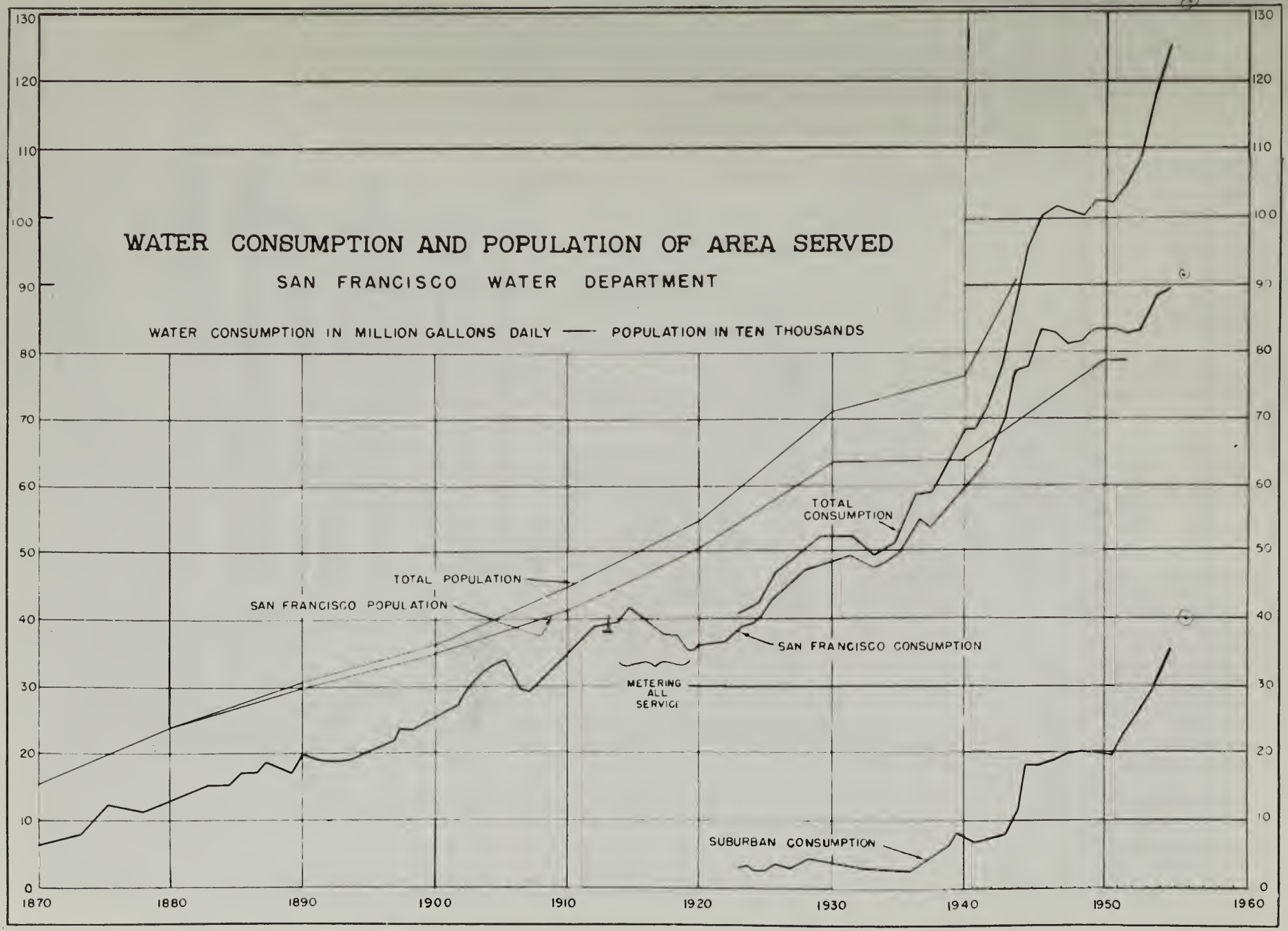
During the year 15.5 acres of land were sold and 0.6 acres were purchased, making a net decrease of 14.9 acres during the past year and resulting in a total of 63,322 acres being held under the Department's jurisdiction.

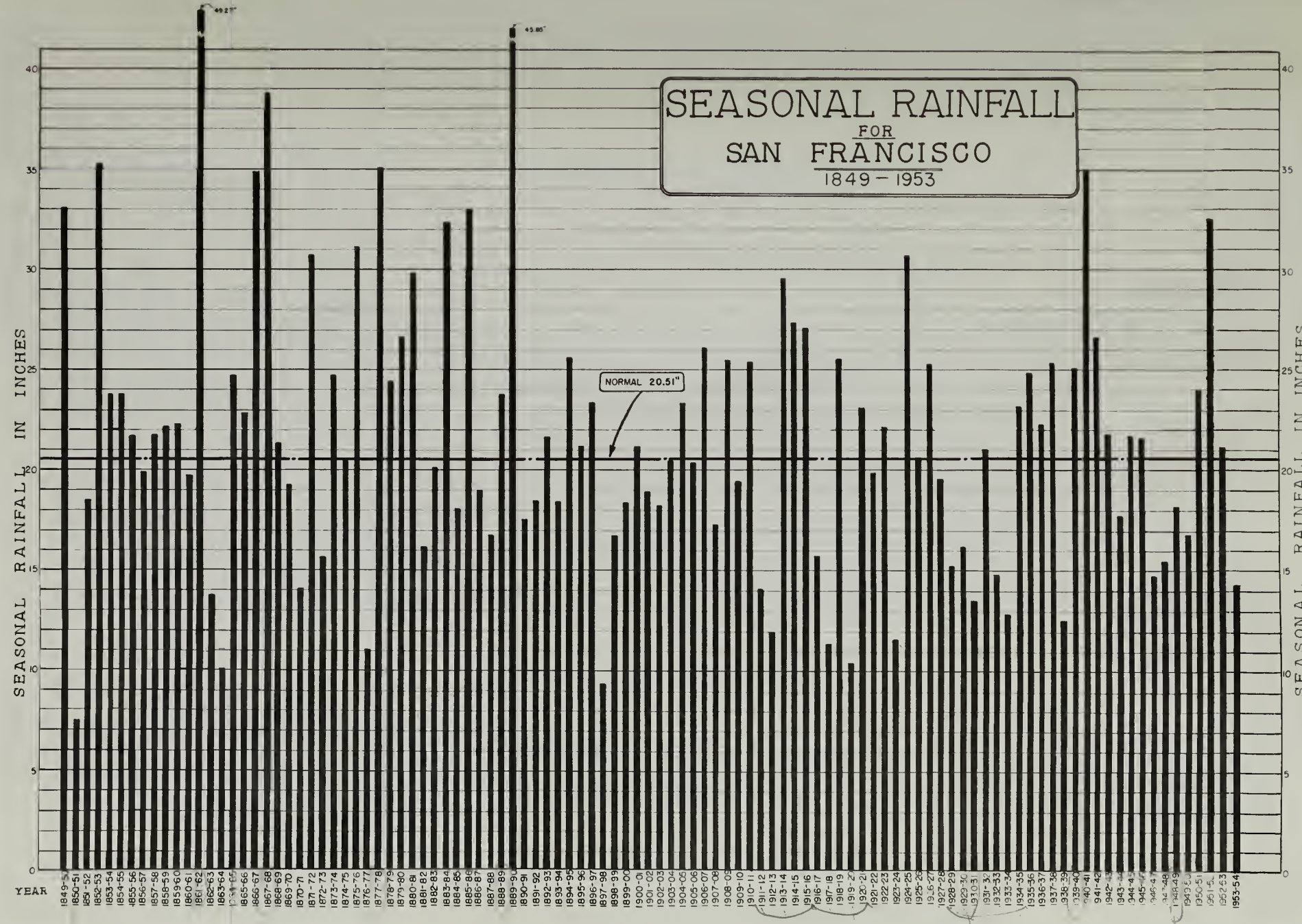
Chemical treatment of all water supplies has been continuous and all consumers received water that was in full compliance with State and Federal standards for potability.

During the fiscal year the Department prepared 48 contracts for construction work and for furnishing of equipment, totaling in amount to over $2,200,000.

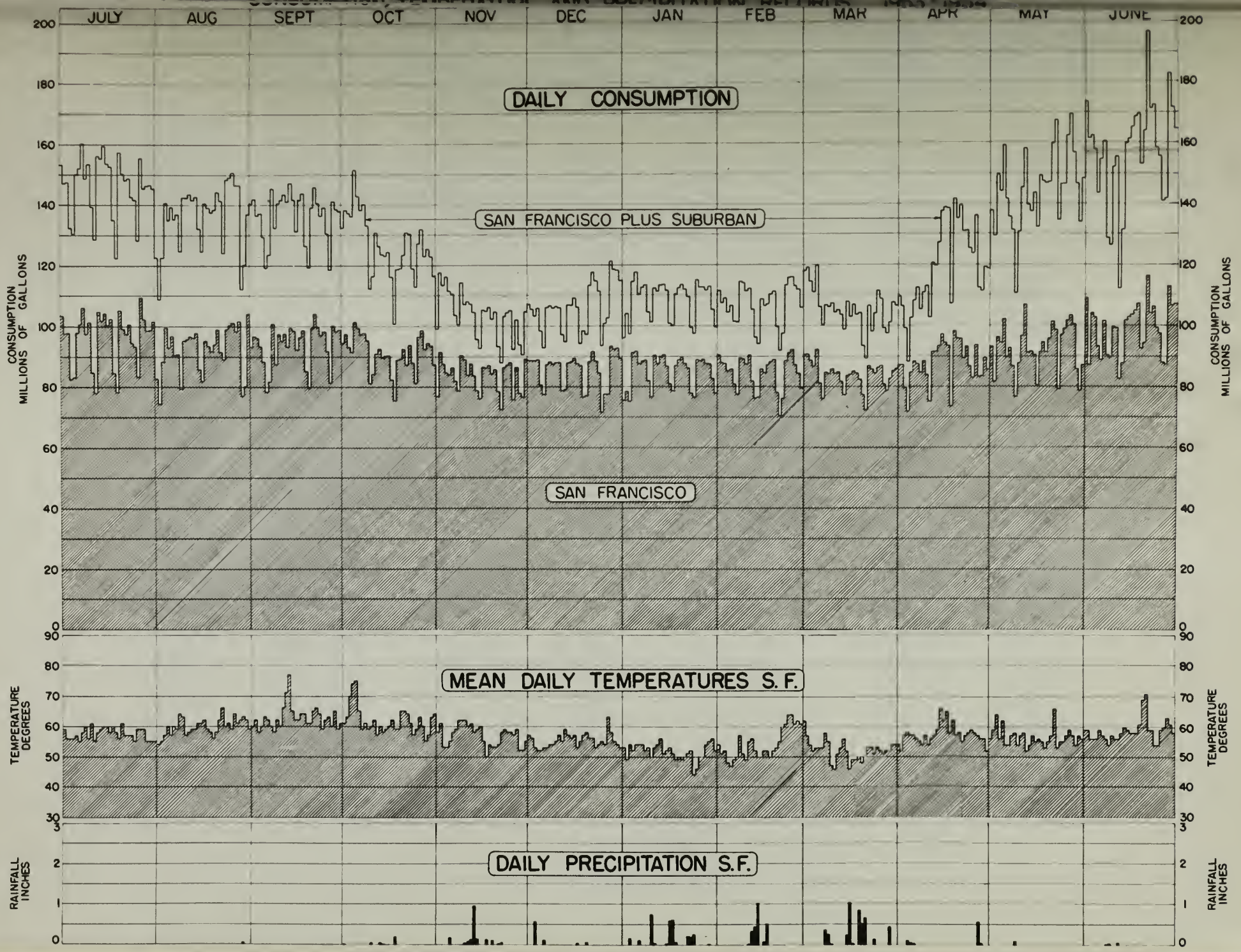
This foreward would not be complete without expressing a sincere appreciation to our personnel for their loyalty and cooperative efforts in maintaining and improving the efficiency of the Department.


HISTORICAL DEVELOPMENT & PROGRAM FOR FUTURE AQUEDUCT CONSTRUCTION
SAN FRANCISCO WATER DEPARTMENT
PUBLIC UTILITIES COMMISSION
JUNE - 1954
MILLIONS OF GALLONS PER DAY
AVERAGED FOR ONE YEAR
DEVELOPMENT TO MEET WATER CONSUMPTION 1865-1954
PROBABLE FUTURE CONSUMPTION IN 1960
TOTAL SOURCES (SEE NOTE)
AVERAGE DAILY CONSUMPTION FROM SAN FRANCISCO WATER DEPARTMENT SYSTEM
AVAILABLE SUPPLY
NILES 20in. ALAMEDA PIPE
LOWER CRYSTAL SPRINGS DAM
LOBOS CREEK DISCONTINUED
SUNOL FILTER BEDS
ADDITIONAL SUBMARINE PIPE
RAVENSWOOD PUMP
1906 FIRE
METERS INSTALLED 1915-1919
PULGAS PUMPS & BAY DIVISION PIPE NO.1
CALAVERAS DEVELOPMENT COMPLETED
FIRST HETCH HETCHY WATER AVAILABLE
BAY DIVISION PIPE NO.2
PENINSULA COMMUNITIES ABANDONED WELL SUPPLIES
BAY DIVISION PIPE NO.3 AND SAN JOAQUIN PIPE NO. 2
1960
F1956 or 1957
Bay Div. #4 & 5 #3
2nd Coast R. Tunnel and pipes.
NOTE:
DEVELOPMENT TO MEET WATER CONSUMPTION IS FOR DELIVERY TO THE PENINSULA RESERVOIRS AND DOES NOT INCLUDE FACILITIES FOR DELIVERY AND DISTRIBUTION THEREFROM.
CALANDER YEAR AVERAGE PLOTTED.
PROBABLE FUTURE CONSUMPTION IS BASED ON 3 % INCREASE PER YEAR.


WATER CONSUMPTION AND POPULATION OF AREA SERVED
SAN FRANCISCO WATER DEPARTMENT
WATER CONSUMPTION IN MILLION GALLONS DAILY —— POPULATION IN TEN THOUSANDS
TOTAL CONSUMPTION
TOTAL POPULATION
SAN FRANCISCO POPULATION
SAN FRANCISCO CONSUMPTION
METERING ALL SERVICE
SUBURBAN CONSUMPTION
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960


SEASONAL RAINFALL
FOR
SAN FRANCISCO
1849 – 1953
NORMAL 20.51"
SEASONAL RAINFALL IN INCHES
SEASONAL RAINFALL IN INCHES
YEAR
0
5
10
15
20
25
30
35
40

CONSUMPTION, TEMPERATURE AND PRECIPITATION RECORDS
MAR
APR
MAY
JUNE
200


JULY
AUG
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUNE
DAILY CONSUMPTION
SAN FRANCISCO PLUS SUBURBAN
SAN FRANCISCO
CONSUMPTION MILLIONS OF GALLONS
200
180
160
140
120
100
80
60
40
20
0
MEAN DAILY TEMPERATURES S. F.
TEMPERATURE DEGREES
90
80
70
60
50
40
30
DAILY PRECIPITATION S.F.
RAINFALL INCHES
3
2
1
0

WATER PRODUCTION

GENERAL OPERATIONS:

Total water consumption during the year was 45,605.4 million gallons, averaging 124.9 million gallons per day, which is 6.5 million gallons per day more than during the preceding year.

Deliveries to the San Francisco comsumption area averaged 89.7 million gallons daily, with deliveries to suburban areas averaging 35.2 million gallons daily. (Some Suburban deliveries in northern San Mateo County are included in the San Francisco consumption area figures.)

See pg. 3

Deliveries from Hetch Hetchy were	90.08 mgd	32,878.0 million gallons.
Draft from Local Production and storage was		12,727.4 million gallons.
Total	34.86 mgd	45,605.4 million gallons.
	124.9 mgd	

The total delivery from Hetch Hetchy since October 18, 1934 now amounts to 318,367. million gallons or an average of 44.2 million gallons per day.

34.8
365 / 12727.4
1095
1777
1460
3174
2920
2540

The 24 hour peak consumption for the entire system was 197.0 million gallons, occuring on June 21, 1954 and the month of June 1954 had the highest daily average consumption of any month during the year averaging 157.3 million gallons daily.

All water delivered to San Francisco was, as heretofore, supplied entirely from San Andres and Crystal Springs Reservoirs in San Mateo County. Those reservoirs were replenished from run-off, by water drawn from Calaveras Reservoir in Alameda and Santa Clara Counties and from the Hetch Hetchy System in the Sierra Nevada Mountains.

Practically all water deliveries outside the City of San Francisco are made to vendors who take large quantities at the department's transmission mains. These vendors, individual cities, public utility companies, water districts or private individuals own and operate their own distribution systems.

This department delivers water to practically all cities and towns in San Mateo County and to Palo Alto on the west side of the Bay, to the City of Hayward and other other relatively small deliveries on the east side of the bay south of Hayward.

RAINFALL, CATCHMENT AND STORAGE:

Rainfall at the Calaveras Reservoir was 17.09" which is 71% of normal, and 19% lower than the previous year's rainfall. On July 1, 1953 Calaveras Reservoir was at gauge height 135' (26.0 billion gallons) and receded to a low of 117' -1¼" (19.1 billion gallons) on December 3, 1953. The seasonal rains raised the reservoir water level to a gauge height of 128' - 9¼" on April 30, 1954. By July 1, 1954 the water level had lowered to 124' - 2" (21.7 billion gallons). During the fiscal year 7.9 billion gallons were withdrawn for consumption, 1.1 billion gallons spilled into the creek and storage was reduced 4.4 billion gallons, making a productivity of 4.6 billion gallons which is equal to an average of 12.7 MGD.

Rainfall on the Peninsula watesheds was approximately 70. per cent of normal, and 20 per cent lower than the previous season. Crystal Springs Reservoir on July 1, 1953 was at gauge height of 112' 8" (18.3 billion gallons), storage was increased to 19.0 billion gallons on August 13, 1953, dropping to 103'-11½" (14.9 billion gallons) on February 12, 1954. The highest gauge reading after February 12 was 111' 9"(18.0 billion gallons) and occurred on May 17, 1954. On June 30, 1954 the water level was at gauge height 110' 8" (17.5 billion gallons). Seasonal rainfall at San Andres Reservoir amounted to 24.41 inches or 65 per cent of normal. At the Pilarcitos Reservoir seasonal rainfall amounted to 34.48 inches or 76 per cent of normal.

The seasonal gain in storage in City, Peninsula and Calaveras Reservoirs, from a low 42,004 million gallons on February 11, 1954 to a maximum of 50,797 million gallons on May 22 1954, amounted to 8,793 million gallons. Surface storage in these reservoirs on June 30, 1954 was 48,293 million gallons as compared to 53,499 million gallons at the end of the preceding year.

Well No. O-1 in the Pleasanton Valley was operated once a week to supply water for use by tenants on water department land.

TRANSMISSION:

Water consumption in the San Francisco consumption area required delivery of a daily average of 89.7 million gallons from the Peninsula Reservoirs. Of this amount, an average of 39.3 million gallons daily was delivered through the 60 inch and 44 inch Crystal Springs Pipe Lines; 34.6 million gallons daily through the San Andres 54 inch and Sunset 60 inch pipes; 7.7 million gallons daily through the College Hill Pipe Line and 8.1 million gallons daily through the Baden-Merced Branch Pipe Line.

Additional suburban consumption, averaging 35.2 million gallons daily was supplied directly from the several transmission and supply lines at various points in Alameda, Santa Clara and San Mateo Counties.

An average of 34.9 million gallons daily was pumped from Crystal Springs Reservoir into the San Andres Reservoir through the Crystal Springs aqueduct and to augment the San Andres water supplied San Francisco an average of 8.5 million gallons daily was pumped by Alemany Pumps into the higher levels of the city.

The three Bay Division Pipe Lines carried an average of 111.8 million gallons daily to the westerly side of San Francisco Bay. Of this amount, an average of 95.4 million gallons daily was delivered into Crystal Springs Reservoir and the remaining 16.4 million gallons per day was delivered to consumers in the lower peninsula area. Of the total amount of 111.8 million gallons per day, Hetch Hetchy supplied 89.9 million gallons daily and the Alameda sources, 21.9 million gallons daily.

RESERVOIRS:

On July 1, 1953 the storage in Calaveras Reservoir was 26,042 million gallons or 83 per cent of its capacity. This storage dropped to 19,057 million gallons on December 3, 1953. At the end of the fiscal year the storage was 21,664 million gallons, or 4,378 million gallons less than at the beginning of the fiscal year.

Storage in Crystal Springs Reservoirs increased from 18,347 million gallons on July 1, 1953 to 19,031 million gallons on August 13,1953. Withdrawals brought this down to 14,938 million gallons on February 12, 1954 which was increased, partially by runoff, to 17,955 million gallons by May 17, 1954. At the end of the year there were 17,486 million gallons in storage. This was 78% of the rated capacity.

San Andres Reservoir storage on July 1, 1953 was 5,740 million gallons or 92% of its capacity. This level was allowed to drop to the year's low of 73' $8\frac{1}{2}$" (4,353 million gallons) on February 8, 1954 to provide capacity for the runoff from San Andres and Pilarcitos watersheds. Throughout the year a high level was maintained by operating Alemany Pumps and pumping from Crystal Springs Reservoir. The maximum gauge height during the year was 84' $2\frac{3}{4}$" on July 1st, 1953 with a storage of 5,911 million gallons.

On July 1, 1953 the storage in Pilarcitos Reservoir was 800 million gallons. The minimum storage, occuring on January 6, 1954 was 420 million gallons. The maximum storage was 852 million gallons and was reached on March 25, 1954. Storage at the end of the fiscal year was 834 million gallons, or 89 per cent of the reservoir's capacity.

During the year Pilarcitos Reservoir supplied 1,042.9 million gallons to San Andres Reservoir, this together with the gain in storage of 34 million gallons makes an aveage production for the fiscal year of 2.9 million gallons per day.

PUMP OPERATIONS:

The Irvington Pump Station operated only during the periods October 20 to 23, November 12 and 13, and December 3, pumping a total of 123 million gallons of water into Bay Division Pipe Line No. 1. This water was supplied from the Sunol Filter Galleries, there being no water withdrawn from the Pleasanton Well Field for conveyance to Sunol.

In order to maintain high water level in San Andres Reservoir it was necessary to operate the Crystal Springs-San Andres Pumps 358 days during the year. A total of 12,743 million gallons was pumped from Crystal Springs to San Andres Reservoir making a daily average pumpage of 34.9 million gallons.

Baden Pumping Station was not operated during the year but the operating units were maintained in a condition of readiness.

The Alemany Pumping Station was operated seven days pumping a total of 3,104 million gallons from the University Mound Reservoir into the College Hill and Sunset Systems, which receive their major supply from San Andres Reservoir.

The Lake Merced Pumping Station pumped 318.2 million gallons into Sunset Reservoir in sixteen days during May and June 1954. This water came from Crystal Springs Reservoir through the Crystal Springs No. 2 and Sunset Supply Pipe Lines.

PIPE LINES:

The Sunol Pipe Line from the Alameda Creek Siphon to the Town of Sunol, delivered a total of 344.7 million gallons of water during the year. Of this total 323.6 million gallons were used for irrigation and the balance of 21.1 million gallons was used for the Sunol domestic supply.

The Niles-Irvington Pipe Line was used seven days to carry water gathered at Sunol Filter Galleries to the Irvington Pumping Station from where the water was boosted into the Bay Division Pipe Lines. A total of 123 million gallons was pumped into the Bay Division Pipe Lines from the Niles-Irvington Pipe Lines.

On the west side of the bay the section of the Alameda Transmission Line, between Burlingame and San Carlos, continued to deliver Crystal Springs water to local consumers.

The Crystal Springs 60 Inch Pipe Line was in service throughout the year carrying an average of 46.2 million gallons per day from the reservoir. This quantity was increased by an average of 0.3 of a million gallons per day with San Andres water through San Andres Pipeline No. 1,making a total of 46.5 million gallons per day. The Crystal Springs 44 inch Pipe Line carried 6,433 million gallons, an average of 17.6 million gallons per day for the year. Of this total of 64.1 million gallons daily, 30.8 million gallons daily were delivered to, and used in, the University Mound Distribution System and by consumers between it and the Millbrae Headquarters; an additional 8.5 million gallons per day delivered to University Mound Reservoir was pumped through the Crosstown Pipe Line to higher level disbribution systems in San Francisco; 8.0 million gallons per day were diverted from the Crystal Springs 60-Inch Pipe Line into the Baden-Merced Branch Pipe Line, through which it was delivered to consumers along the Pipe Line and to Merced Manor Reservoir;0.9 of a million gallons per day, average, was transferred to Sunset Supply Line and boosted by Lake Merced Pumps to Sunset Reservoir, and the balance of 15.9 million gallons daily was delivered to the distribution systems of the several Peninsula Communities, as far south as San Carlos.

During the fiscal year the three Bay Division Pipe Lines carried a total of 40,806 million gallons to the westerly side of the bay, of which 34,836 million gallons were delivered through the Pulgas Temple to Crystal Springs Reservoir.

The Palo Alto Pipe Line delivered a total of 1,740 million gallons to various consumers along the line south of Redwood City for an average of 4.8 million gallons daily. The maximum weeks' demand on this line averaged 8.0 million gallons daily as compared to 7.7 million gallons daily for the maximum week's demand during the preceding year.

The College Hill Distribution District consumption averaged 9.2 million gallons per day. Of this amount 7.7 million gallons daily were delivered through the 30 inch College Hill Pipe Line and the balance of 1.5 million gallons per day came from Alemany Pumps via the Cross Town Pipe Line. The 7.7 million gallons daily supplied through the College Hill Pipe Line came from the San Andres Reservoir via the 44 inch San Andres Pipe Line.

The Baden-Merced Branch Pipe Line carried an average of 8.1 million gallons per day which was supplied from the 60 inch Crystal Springs Pipe Line, with the exception of 0.1 of a million gallons per day average from San Andres Pipe Line No. 1.

During the year the 54 inch San Andres Pipe Line carried a total of 12,402 million gallons of water, or an average of 34 million gallons per day, from San Andres Reservoir to Sunset and the other high San Francisco Pressure Districts, to consumers outside of the City and County of San Francisco and 0.3 of a million gallons per day average to Crystal Springs Pipe Line No. 2.

AQUEDUCTS:

The Sunol Aqueduct carried water throughout the entire year from the Sunol Filter Galleries to Niles Reservoir. For seven days water from this source supplied the Irvington Pump Station via the Niles Irvington Pipe Line where it was then pumped into the Bay Division Pipe Line No. 1 for delivery to consumers on the west side of San Francisco Bay. During the balance of the year the Sunol Aqueduct water was delivered to the Alameda County Water District.

The Crystal Springs Aqueduct was in operation throughout the year, carrying a total of 12,743 million gallons of water to San Andres Reservoir from Crystal Springs Reservoir.

The Pilarcitos Aqueduct to San Andres Reservoir was in service during the entire fiscal year and carried an average of 2.9 million gallons daily to San Andres Reservoir. This aqueduct has a capacity of 40 million gallons per day.

ALAMEDA DIVISION GENERAL:

Calaveras Reservoir was given one copper sulphate treatment for algae control. The exterior of the areator was cleaned and painted again this year.

An eight inch meter was installed on the Calaveras Pipe Line for measuring irrigation flow to the 110 acres recently leased for strawberries. A new meter box was installed on Hetch Hetchy Pipe Line No. 3 at Milpitas for the Ford Plant service.

The two water storage tanks at Irvington Portal and the two Sunol water tanks were cleaned and painted.

At Alameda Diversion Dam the flood gate lining was replaced and the dam was sluiced out after heavy rainfalls. A new culvert was installed on the road leading to the dam.

Necessary planking was replaced in the Sunol Dam Weir. The Sunol Water Temple grounds were cleaned and leveled and two rooms in the guest cottage painted.

Approximately fifteen per cent of the Department's telephone poles and brackets between Calaveras Reservoir and the Bay were replaced.

One leak on Hetch Hetchy Pipe Line No. 1 near Newark Gatehouse was repaired. This leak was occasioned by electrolytic action.

The pipe trestle supporting Hetch Hetchy Pine Line No. 1 across Newark Slough was repaired because of damage by limnoria. Approximately eighty five new bents and saddles were installed and additional bents were repaired by reinforcing the piling and replacing caps and sills. The exposed sections of this pipe line between Newark and the Bay were cleaned and painted.

The Irvington Pumping Station was operated four days in October and two days in November while the Bay Division Pipe Lines were shut down for connection of the Alameda Creek Siphon No. 2 at Alameda West Portal. It was operated again for one day in December.

Well No. O-1 in the Pleasanton Valley was operated once a week to supply tenants Jackson and Perkins. No water was pumped by the Department from Pleasanton Wells for export and none for the old Hearst Ranch during the year.

3.43 mgd
365) 1,251,654,000
1095
1566
1460
1065

ALAMEDA COUNTY WATER DISTRICT:

During the year, a total of 1,251,654,000 gallons of water was released to the Alameda County Water District for replenishment to the underground gravel of the Niles Cone area. Under the terms of the 1920 award, 501,614,000 gallons were due the district during the year. *

The quantities of water due the District and the quantities released by the Water Department to the District for replenishing the underground waters for each of the past five years are as follows:

	Due the District	Released to the District
1950	975,861,000	220,670,000
1951	8,095,000	2,900,694,000
1952	350,185,000	1,896,660,000
1953	757,955,000	1,507,419,000
1954	501,614,000	1,251,654,000
Totals	2,593,710,000	7,777,097,000

PLEASANTON TOWNSHIP COUNTY WATER DISTRICT:

The Sheriff of Alameda County continued to use the U.S. Navy's Camp Shoemaker as Santa Rita Rehabilitation Center during the fiscal year. Water supplied to this institution, as well as to the former Naval housing project, Komamdorski Village and the new Parks Air Force Base, was taken from the Navy's 4.105 acre tract until September 15, 1953 when pumping was started on their one hundred acre tract. For the balance of the fiscal year the Navy pumped from both of these tracts within the Pleasanton Water District. Reactivation of Camp Parks increased withdrawal of ground waters which varied from a high of 2.2 million gallons per day in June, 1954 to a low of 0.9 million gallons a day in February, 1954. Except for artesian flow above ground surfaces between 1940 and 1944, no water was taken from the Water Department's Pleasanton Wells for export subsequent to 1939 until February, 1948. Between this latter date and April 30, 1949, the Department took an average of 9.9 million gallons per day for export to San Francisco. Subsequent to April 30, 1949, San Francisco has taken no water from its Pleasanton source except for local use.

Withdrawals for the above enumerated purposes together with those for domestic and irrigation use within the District materially lowered the water table over a period of years throughout the entire Water District. Water level in Pilot Well W-103X had a seasonal high point of 66 feet below ground surface in February, 1948, and 69.8 feet in April 1954. *

The Town of Pleasanton continued, throughout the year, to obtain all of its water supply from Water Department Wells, located at Black Avenue and Santa Rita Road, and paid all resulting electric power bills which payments for the entire year were reimbursed by the Water Department as Pleasanton's Pilot Well was below the elevation where San Francisco is required to furnish the Town of Pleasanton with water. Throughout the year, the Department also reimbursed the District for electric power charges for pumping "Community Wells" and paid power bills rendered to land owners, except as otherwise provided in the "Pleasanton Township County Water District Agreement," all of which was in conformity with the Department's obligations under the Pleasanton Water District agreement.

Runoff into the Department's local storage reservoirs during the 1953-54 season, was of sufficient quantity to require no pumping from the Pleasanton Wells for export purposes. There was, however, a general lowering of the water table in the Department's field of about five feet and a drop of six feet in the water surface in Pilot Well No.W-103X which governs payment of electric power bills for pumping water supplies for land owners in conformity with the "Pleasanton Water District Agreement".

PENINSULA DIVISION GENERAL:

The Baden Pumps were not operated during the year. The motors were turned over occasionally and the station was kept in operating condition. The grounds were maintained in accordance with our agreement with local authorities.

The water in Crystal Springs Reservoirs was maintained at a high level throughout the year by adequate flows from Hetch Hetchy and the booster pumps were not operated.

The Crystal Springs - San Andres Pumps were shut down only seven days during the year and these shut downs were necessary because of breaks in the canal.

The water supply tank at the ranger's collage at Upper Crystal Springs Dam was replaced with a 10,000 gallon tank taken from the Millbrae Yard.

General maintenance and repairs to buildings and fences, fireguarding and cleaning up of properties were normal.

The San Andres Quarry, under lease to The Lowrie Paving Co., Inc., is in full operation. Settling ponds for the wash water have been excavated to protect the lake water from silt.

A new launch has been purchased to replace the old one and the boathouse was rebuilt at San Andres Reservoir.

At Pilarcitos the road bridges in the area were repaired as were a number of leaks in the masonary walls of the forebay.

During the year one leak occurred in the San Andres Pipe Line No. 1 at 2nd Avenue and El Camino Real in South San Francisco. The blowoff connection of this pipeline at the Silva Tract was double gated as the original valve was leaking badly.

One leak was repaired in San Andres Pipe Line No. 2 at San Bruno Gulch. The blowoff outlet was connected to a new storm drain near the Jefferson Elementary School. The gatehouse at the east end of the north outlet tunnel and the chlorine houses were cleaned and painted both interior and exterior. The right of way through the cemeteries which was partially covered with brush required considerable clearing.

No trouble was experienced on the Baden-Merced Pipe Line. The line was patrolled twice a week.

One 500 Horse Power General Electric 2200 volt induction motor in Crystal Springs Pump Station burned out and had to be re-wound and overhauled. The larger impeller was installed in No. 4 pump to increase the output.

The Crystal Springs Pipe Line No. 1 developed four new leaks between South San Francisco and the County Line and two lead sleeves had to be caulked. A large sleeve was installed over a number of leak bands in the Howard Tract off Crystal Springs Road, San Mateo. The pipe at Brisbane was ripped open by a construction company and a patch was welded over it.

A number of leaks occurred in Crystal Springs Pipe Line No. 2 near Geneva Avenue. These leaks appear to have been caused by electrolytic action. The exposed lenghts of this line were cleaned.

Unitl this year water diverted to University Mound Reservoir through Crystal Springs Pipe Line No. 2 was regulated at Baden. This caused considerable wear on the 42 inch double disc valve used for this regulating and trouble in regulating, as no actual recording took place at this point. The standpipes between Baden and University Mound Reservoir have been removed and vacuum valves installed in lieu of same, allowing the regulating to be done near the reservoir, where a meter records the flow.

A test was made to determine the maximum anount of water that could be brought from Irvington Portal and from Calaveras through the Bay Division Pipe Lines to the Peninsula. The maximum rate recorded by Irvington meters was 192 million gallons per day. *

At Ravenswood and west of El Camino Real at Redwood City a number of leaks occurred, sometimes several holes appearing in the same excavation; in the Bay Division Pipe Lines. A break in a spool serving a large customer caused a large flood which damaged some property. The expansion joints in the lines on the bridge at Ravenswood required tightening on several occasions. Spot painting was done on both lines where pipe is exposed on trestles.

Lights were installed in the valve house at Redwood City which are necessary for regulating at night. Fences had to be build across the right of way where roads exist on account of the breaking of sidewalks by outside equipment.

Repairs were made to the operator's cottage at Ravenswood.

One leak occurred in the cement-lined section of the old Alameda 36 inch Transmission Line. This leak occurred in San Mateo and was the first leak from natural causes since this pipeline was cement-lined in the fall of 1948. There were four leaks in the unlined sections of this line.

A building was constructed over the pressure regulating valves in Burlingame at the connection of the Alameda Line with the Crystal Springs Pipe Lines.

The Crystal Springs - San Andres Canal was out of use for repairs for six days in December and one day in January. The footings of trestles were repaired and in some places new trusses were installed. The lining of the canal is very weak and will have to be replaced to allow major repairs to be made.

The road to Stone Dam Reservoir which supplies water to the Half Moon Bay area was rocked, trails cleared and culverts installed to make the area accessible during winter.

A number of leaks have occurred in the Pilarcitos Aqueduct Siphon on the trestle across the first gulch leading from tunnel #2. This section is a part of the original installation of the year 1867. The pipe is 44" x 3/16", and about seventy feet will have to be replaced.

Letters have been sent to all consumers on the College Hill Line in San Mateo County, advising them that this section of line will be removed from service in January 1955, and that they should make arrangements for water from other distributors, as it is no longer economically feasible to supply them on account of the condition of the line. *

A general overhauling of our telephone system was initiated during the year because of its poor condition. Previously repairs have been made to lines only as interruptions to service have occured.

Many leaks continue on the old Universal joint pipe lines within the Airport which we are called to repair.

The portion of the new Sunset line from Burlingame to Baden has now been put into use, giving a direct line from Burlingame to Merced pumping station.

The United States Army has built a road through San Andres watershed lands not owned by the Water Department at the north end of the reservoir. The Department has recommended purchase of this property for many years, to protect against ownership by people using the property to the detriment of the water supply.

The rainfall during the last season was far below normal, resulting in a low productivity for the Peninsula watershed. Runoff averaged 7,570,000 gallons per day as compared to a normal runoff of 18,000,000 gallons per day.

Applications for new and renewal equestrian permits totaled 155 for the current year which permit riding on the trails within the Peninsula properties.

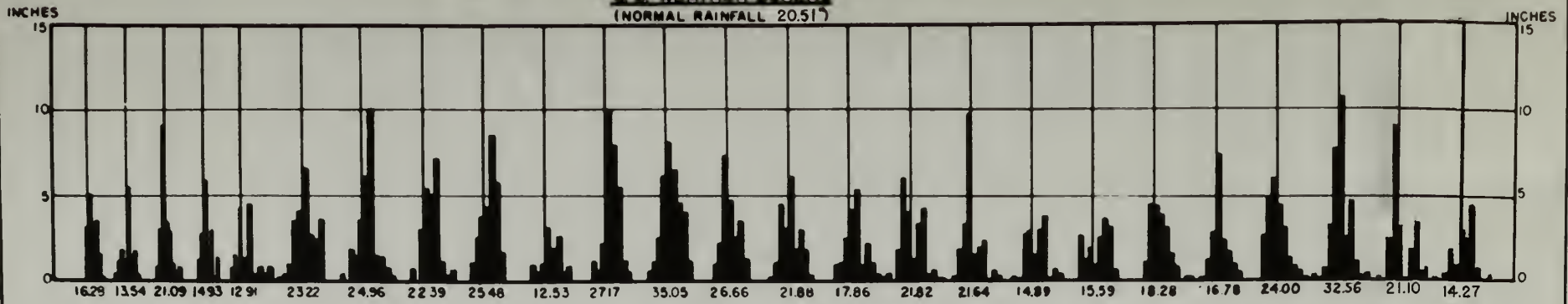
Four large services were installed on the new Bay Division Pipe Line No. 3. In addition, there were seven 3 inch or larger services and thirty-eigth smaller than 3 inch services installed. Six 2 inch meters in one service were replaced with two 6 inch compound meters at Buri-Buri. Twelve 2 inch meters and one 4 inch meter were replaced by two 8 inch compound meters at Millbrae. Fifty seven meters 2 inch and smaller were removed. Where consumers are within City Limits or within water purveyors' territories now served by us, our service is discontinued in accordance with our rules.

SUBURBAN METERS:

There were 49 new services installed during the year for suburban consumers. The total number of suburban meters at the close of the year was 1,073 of which 1,026 serviced 743 active consumers; a decrease of 17 active consumers for the year.

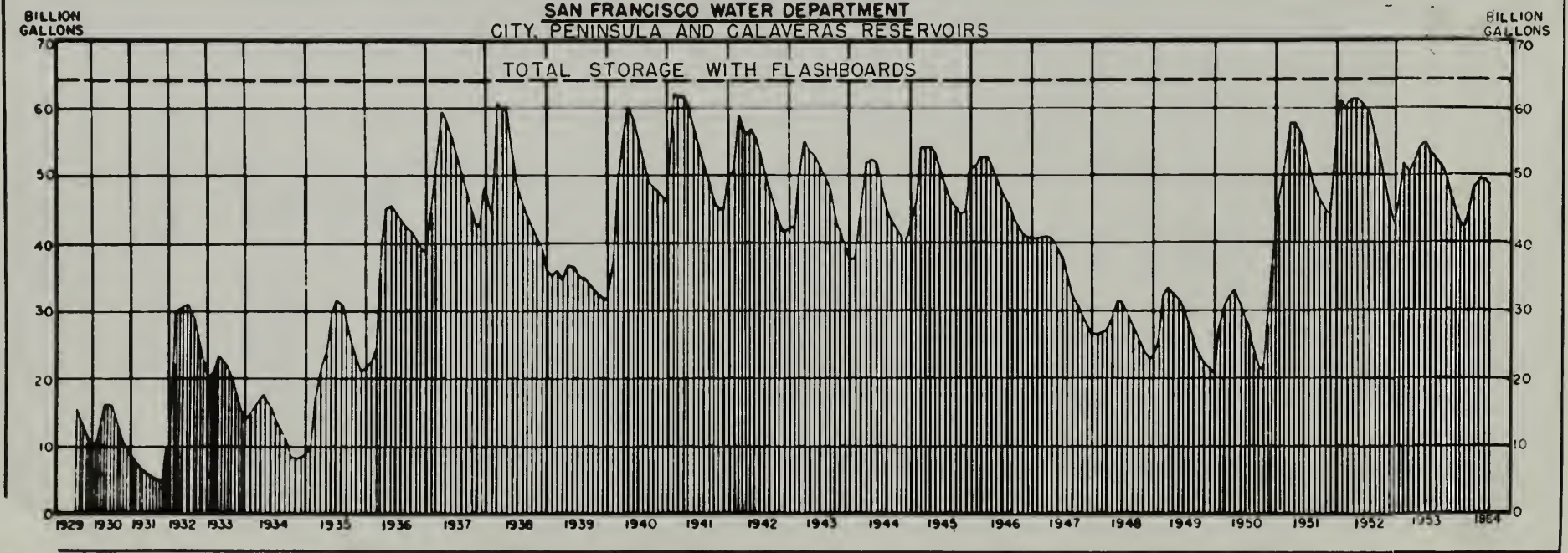
SAN FRANCISCO RAINFALL IN INCHES

U.S. WEATHER BUREAU
(NORMAL RAINFALL 20.51")



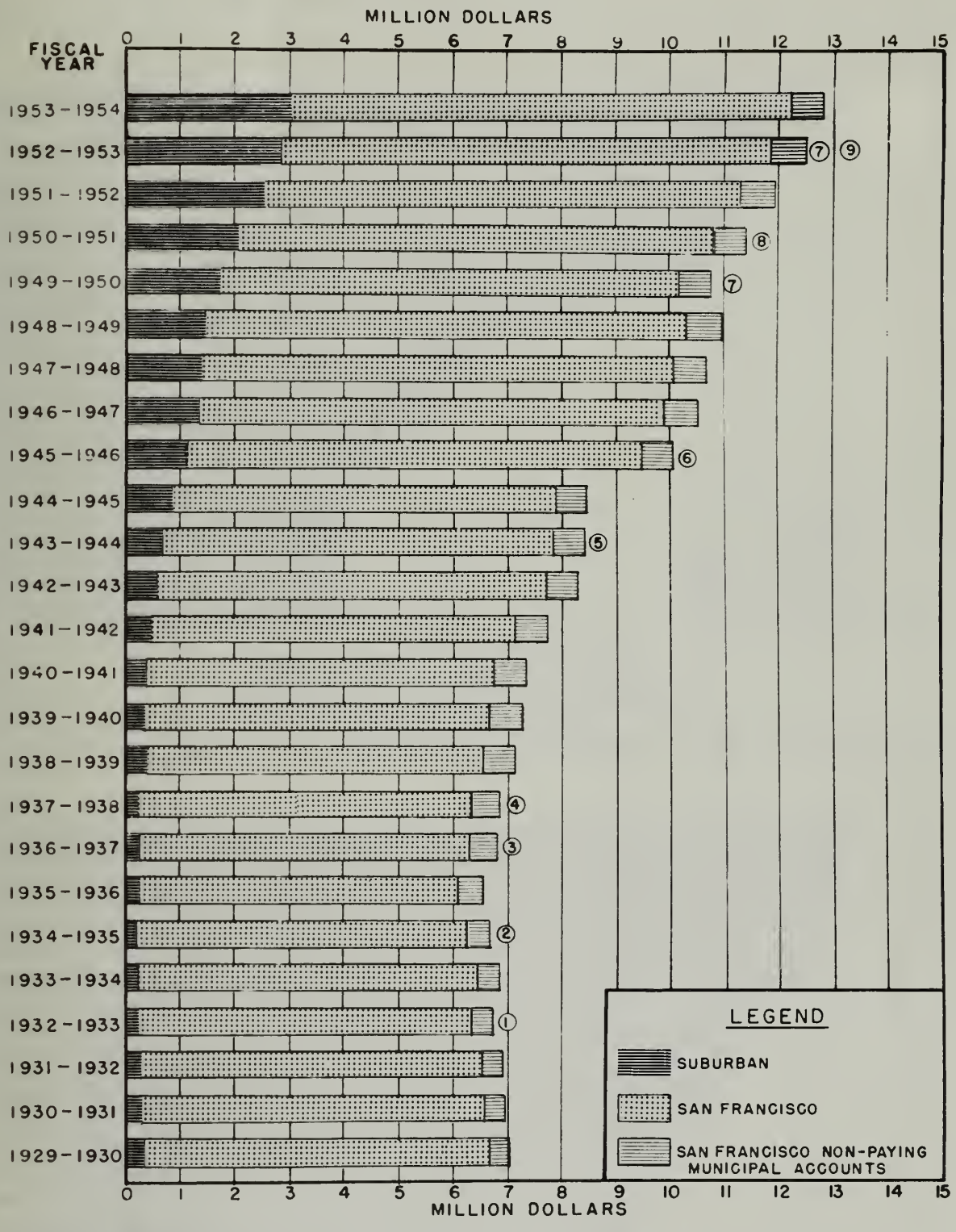
STORAGE IN BILLION GALLONS

SAN FRANCISCO WATER DEPARTMENT
CITY, PENINSULA AND CALAVERAS RESERVOIRS



SAN FRANCISCO WATER DEPARTMENT

WATER SALES



RATE CHANGES:—

① OCT. 26, 1932 75% REDUCTION ON FIRE SPRINKLER SERVICE CHARGES.

② DEC. 1, 1934 10% REDUCTION ON ALL RATES EXCEPT HYDRANTS AND SPRINKLERS.

③ JAN. 1, 1937 7% & 48% REDUCTION ON INCREASED USAGE AT INDUSTRIAL & WHOLESALE RATES.

④ JAN. 1, 1938 7% & 48% REDUCTION APPLIED TO ALL " " " " " "

⑤ DEC. 1, 1943 15% REDUCTION TO ALL CONSUMERS WITHIN CITY & COUNTY OF SAN FRANCISCO.

⑥ SEPT. 1, 1945 PRECEDING 15% REDUCTION REMOVED FOR CONSUMERS WITHIN CITY & COUNTY OF SAN FRANCISCO. 15% INCREASE FOR SUBURBAN CONSUMERS.

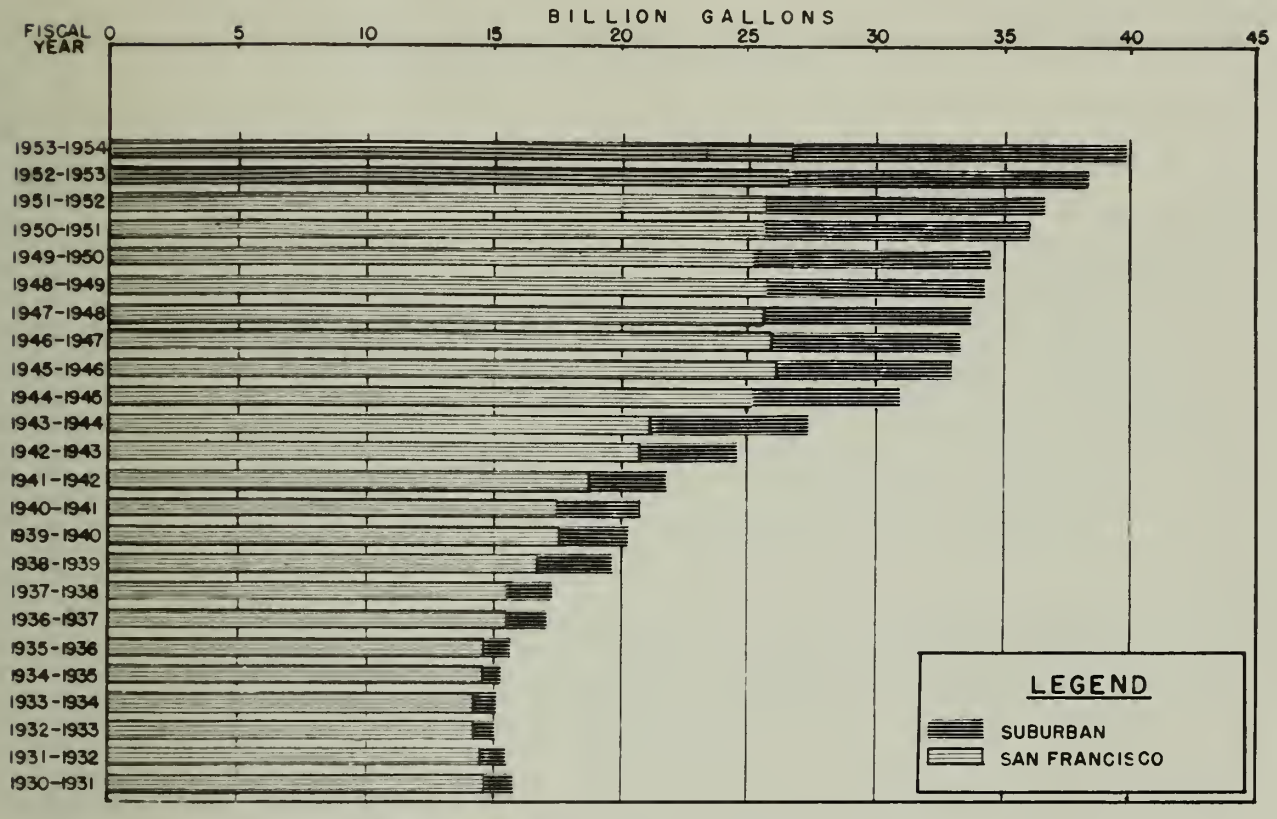
⑦ ~~JULY 1, 1949 INCREASE OF HALF CENT PER 100 CU. FT. — SAN CARLOS & SAN MATEO.~~ DELETED 7-1-53

⑧ FEB. 1, 1951 INCREASE FOR FOURTH BLOCK WATER TO 15 CENTS FOR CITY & 16 CENTS FOR SUBURBAN; 10% DISCOUNT ON FOURTH BLOCK IF WATER WERE NOT TAKEN FOR RESALE.

⑨ JULY 1, 1952 BEGAN CHARGING REGULAR RATES TO 14 CONTRACT REDUCED RATES CONSUMERS

SAN FRANCISCO WATER DEPARTMENT

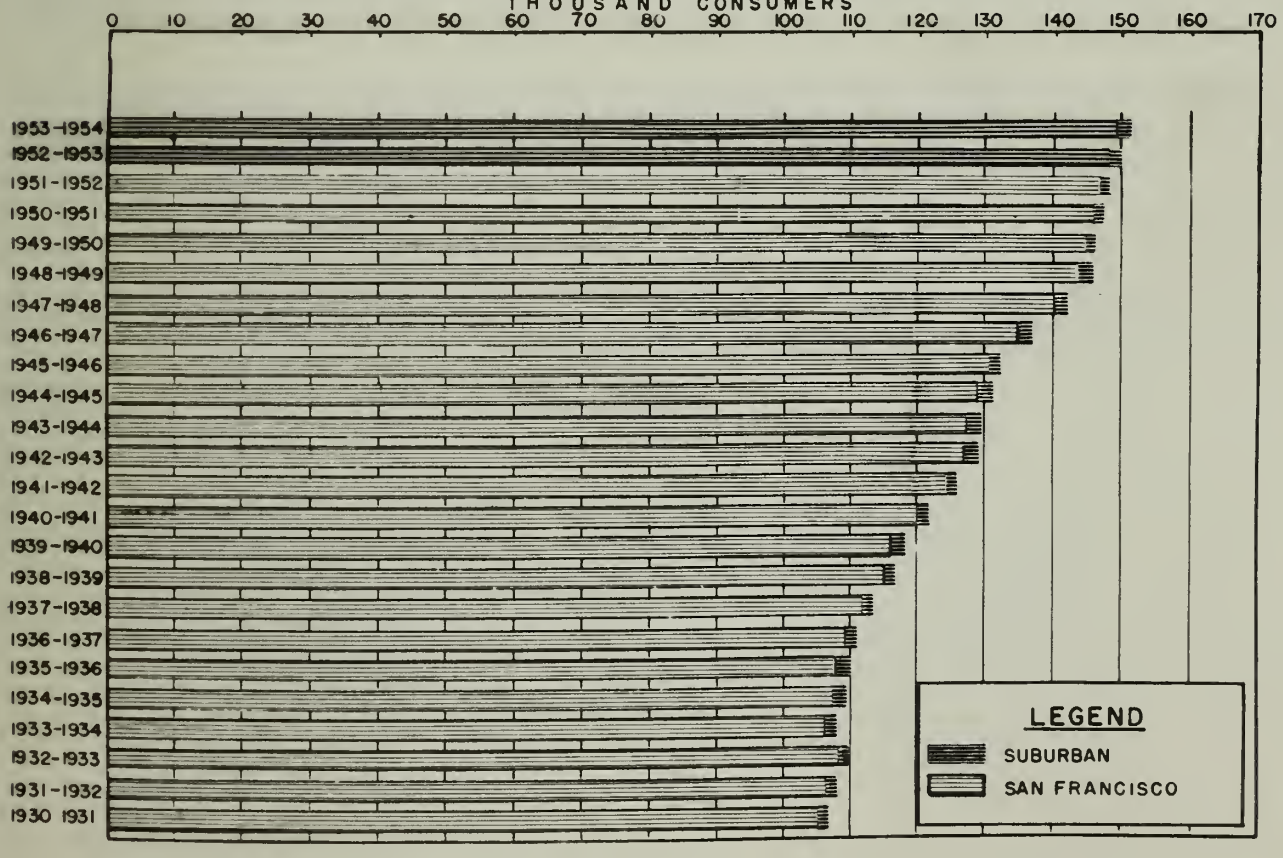
WATER DELIVERED AT CONSUMERS METERS



SAN FRANCISCO WATER DEPARTMENT

NUMBER OF ACTIVE CONSUMERS

AS OF JUNE 30



CITY DISTRIBUTION DIVISION

WATER CONSUMPTION:

The average daily consumption for the City and County was 89,712,975 gallons, an increase of 1,229,317 gallons, or about 1.4 percent over the previous year. There was an increase in consumption in all of the residental districts, except Merced Manor, amounting to 1,721,125 gallons. Forest Hill increased 3.9%, Stanford Heights 2.6, Sunset 2.9, College Hill 2.0%. Merced Manor residential district showed a decrease in average daily consumption amounting to 491,808 gallons, or 23.3%. The industrial district, i.e. University Mound, showed an increased consumption of 209,861 gallons, or 0.7%.

The maximum daily consumption of 116,346,000 gallons for the entire City during the year occurred on June 21, 1954, while the day of minimum consumption occurred on Feb. 21, 1954, amounted to 70,194,000 gallons.

OPERATING CONDITIONS:

Due to the fact that San Francisco again experienced a rather cool year, there having been no hot weather for any length of time, there were no "no water" complaints due to the inadequacy of the system.

All of the primary and secondary mains required for the establishment of the new Sutro District have been laid. The cutting in of the required divide gates is now completed, except in a few instances, which were overlooked.

The changeover from the Stanford Heights and Sunset Districts to the Sutro District was started on July 13th and is being done as rapidly as possible. This work should, in all probability, be an accomplished fact by the end of 1954.

FEEDER MAINS:

From past experience a hot spell of several days' duration would create a serious situation throughout the City. This condition can only be overcome by the laying of additional feeder mains in the various distribution districts, as well as the rearrangement of the existing feeder mains. Additional supply mains should also be given consideration. Funds were made available in the coming budget for the laying of some of the feeder mains.

Following is a list of additional feeder mains required, by districts:

Sunset Reservoir District	Feet
12"- 19th Ave. & Holloway to Eucalyptus & Melba	4600
12"- Fulton & 8th Ave. to California & 8th Ave.	4100
12"- California & 4th Ave. to Calif. & 18th Ave.	4200
12"- California & 23rd Ave. to Calif. & 29th Ave.	1800
12"- O'Farrell & Octavia to O'Farrell & Larkin	2400
12"- Dolores & 21st St. to Dolores & 24th St.	1700
University Mound Reservoir District	
16"- 22nd & Indiana Sts. to 22nd & 3rd Sts.	800
12"- Woolsey & Goettingen to Jamestown & 3rd St.	4000
College Hill Reservoir District	
12"-Ellis & Buchanan to Geary & Scott	3000
16"-Franklin & Market to Franklin & Ellis	3500
12"-Webster & Hayes to Grove & Buchanan	1000
16"-Sanchez & 17th St. to Fillmore & Haight	4000
16"-Bowdoin & Alemany to Girard & Mansell	7000

Following is a list of feeder mains which should be transferred from one district to another for better distribution, and which should be accomplished when the above-mentioned feeder mains have been laid:

Size	LOCATION From	LOCATION To	RESERVOIR From	RESERVOIR To
16"	Larkin & Jackson	Larkin to Francisco	P.H.Regulators	Sunset
12"	Post & Powell	Post & Kearny	University Mound	College Hill
12"	Stockton & Post	Stockton & Sutter		
12"	Larkin & Post	Larkin & O'Farrell		
12"	O'Farrell & Larkin	Jones & Geary		
12"	Leavenworth & O'Farrell	Leavenworth & Geary		
12"	Post & Fillmore	Buchanan & O'Farrell	College Hill	Sunset
16"	Fillmore & Bush	Fillmore & Hayes		
12"	24th St.& Sanchez	24th St.& Dolores		
12"	O'Farrell & Fillmore	O'Farrell & Buchanan		
12"	17th St. & Pond	17th St. & Douglass	Stanford Hts.	Sunset

Size	LOCATION From	To	RESERVOIR From	To
12"	17th St.& Douglass	17th St. & Ashbury		
12"	Douglass & 24th St.	22nd St. & Diamond		
12"	Plymouth & Lobos	Ridgewood & Mangels	Stanford Hts.	Sutro
20"	Lyon & Washington	Ashbury & 17th St.		
16"	Kirkham & 8th Ave.	20th Ave. & Moraga		
20"	20th Ave. & Moraga	Taraval & Dewey		
12"	Octavia & O'Farrell	Octavia & Ellis	Sunset	College Hill
12"	Ellis & Van Ness	Ellis & Laguna		
30"	Sloat & 23rd Ave. (Central Pumps)	Portola & Claremont	Sunset	Sutro
30"	Santa Clara & Portola	Capitol & Sadowa		
12"	Ocean & Faxon	Ocean & Harold		

CITY RESERVOIRS:

New composition roofs were placed over Stanford Heights and Wilde Avenue Reservoirs; Potrero Heights and Francisco still remain to be done.

The re-roofing of Francisco Reservoir presents a real problem, since not only must the roof be replaced but the entire wood structure supporting the same must be renewed. In addition to the above, the wooden fence surrounding the reservoir needs replacing.

The water in Lake Honda Reservoir, while not in use, was made turbid again this year by the wash from the development of the property to the east. This condition occured again last winter, and will probably occur each year until the said property is improved.

The property north of Portola Drive and west of Twin Peaks Boulevard is now being developed by the Standard Building Company. Most of this property is at such elevation as to require the water supply to come from a reservoir at elevation 800 feet. Also with the development of Diamond Heights, the property south of Portola Drive and east of O'Shaughnessy Boulevard, much of the water supply will also have to come from this reservoir. Money has been made available for the additional storage, together with an adequate pumping station and feeder mains. The new reservoir will be known as Summit; the pumping station as Summit. The reservoir site is located just south of Palo Alto Avenue and west of Twin Peaks, it being at an elevation of 800 ft., the reservoir having a capacity of about 15.0 million gallons. Plans are complete; construction is under way; and the reservoir should be finished by the end of 1954.

The control of the water supply to the University Mound Reservoir has been transferred from the Millbrae office to the San Francisco office. In the past the line gate in the 60" Crystal Springs pipe line at Baden was the controlling factor. This gate valve is now full open, and the control is obtained by means of the gate valve at the University Mound Reservoir.

In all probability the Summit Reservoir and the Summit Pump Station will be completed before the necessary pipe line can be laid that is required for the transmission of water from the pump station to the reservoir. This situation is brought about due to the fact that the property both north and south of the Summit Reservoir has not yet been sub-divided.

PUMPING STATIONS:

As in the previous fiscal year all pumping stations operated without any serious mishaps. Several of the smaller automatic stations experienced electrical troubles, the fuses in the principal incoming control switch burning out. These difficulties are due to a continuous overload in the station, but fortunately the trouble was discovered in time, thus avoiding any water shortage.

The new pumps for the Forest Hill District have not been installed. It is hoped to avoid this expense with the completion of the Summit Reservoir project.

Lake Merced Pump Station is now completed and ready for operation. With the completion of the new Crystal Springs supply main, this station will be placed in operation and the steam-operated Central Pump Station shut down.

With the creation of the Sutro District the present Stanford Heights District will be supplied by the two electric motor-driven pumps now located at Central Pumping Station. It is proposed to put these electric-driven pumping units on automatic control. The two steam turbine-driven centrifugal pumps now supplying the Stanford Heights District will be used for furnishing water to the Sutro District until the Lake Merced Pump Station is put into service.

As previously stated, with the creation of the Summit District, a new pumping station will be required to supply the district. The station will be located at the site of the Sutro Reservoir just east of its inlet. Construction is under way. The new Summit Pumping Station will consist of

four electric motor-driven centrifugal pumps, each having a capacity of 1,000 GPM. This station will be on automatic control.

Mt. Davidson Pump Station and the required concrete tank have been completed, but due to the difficulties encountered in securing the necessary electric power, the station was not placed in service until the latter part of the year 1953. This station likewise is on automatic control. As soon as this new station was put into service the temporary pump at Myra Way and Dalewood Avenue was shut down and removed.

The Mt. Davidson Pump Station takes its suction from Stanford Heights Reservoir, and discharges into a 75,000 gallon concrete tank at the summit of Mt. Davidson, just east of the cross, at elevation 900 ft. This is the highest elevation that the Water Department has been called upon to distribute water.

CITY PIPE SYSTEM:

Several cast iron feeder mains, 12" and 16" in diameter, were laid for the improvement of the system - two in the Sunset District and one for the improvement of the water supply in the Excelsior District. In addition to the above, several 12" cast iron mains for the development of several subdivisions were laid.

A 30 " steel feeder main was laid in Columbus Avenue in order to support the distribution of the water in the Marina District. In addition to the above steel main, a 36" steel pumping main was laid from the Lake Merced Pump Station to the Central Pump Station, tying into a 30" steel main at that point. This main will be used in conjunction with the 30" steel main in Portola Drive and the 36" steel main running from Portola Drive to Sutro Reservoir, as the supply main for Sutro Reservoir, on completion of the Crystal Springs - Hillsborough Section of the Sunset Supply Line.

The normal routine extensions of 4", 6", 8" and 12" mains were made during the fiscal year, as shown in the attached tables.

SERVICES AND METERS:

It was during the year 1950 that the concept of the proper sizing of the service pipe, the meter and the house-piping should be on a scientific hydraulic basis. This

concept was developed by the Superintendent, and actually put into effect in the middle of 1950. The effect of this concept is clearly shown in Table "A", as follows:

TABLE "A"

NEW DOMESTIC SERVICES

Size Service	1951-52	1952-53	1953-54
3/4"	1542	2125	1971
1"	201	427	628
1½"	86	78	119
2"	52	40	54
3"	15	15	16
4"	20	19	13
6"	1	3	6
8"	1	2	2
Total	1918	2709	2809
% of 3/4"	80.5	78.5	70.2
% of 1"	10.5	15.8	22.3

It should be noted that, percentage wise, the amount of 3/4" services is descreasing, while the 1" service installations are increasing. It should also be noted that the total number of new services installed is on the increase. This is due to two causes: first, to the new building activities within the City, and second, to the necessity of the renewal of old service pipes which, over the many years of service, have become badly encrusted. Most all 3/4" service pipe 30 ft. and over in length must be renewed with 1" pipe if proper water service is to be furnished to the consumer. Also many service pipes approximately 10 ft. in length are being changed to 1", and at the same time many of the 3/4"X5/8" meters are being increased to either full 3/4" or 1" meters. This situation is clearly shown in Tables "D" and "E".

Table No. 17 in the Appendix shows the number of Automatic Sprinkler Installations.

The number of abandoned domestic services for all causes, for the last three fiscal years, is shown in Table "B".

TABLE "B"

ABANDONED DOMESTIC SERVICES

Size Service	1951-52	1952-53	1953-54
3/4"	516	1108	1582
1"	29	45	94
1½"	9	10	23
2"	-	4	7
3"	-	-	1
4"	4	1	-
6"	2	-	-
8"	-	-	-
Total	560	1168	1707
% 3/4"	92.8	94.8	92.8
% 1"	5.2	4.5	5.5

Table "B" is of interest only in that it indicates an increaseing rate of service pipe abandonments. For example, almost three times the number of service pipes, all sizes, were abandoned in the fiscal year 1953-54 as in 1951-52. This table should be reviewed in conjunction with Table No. 21 in the Appendix, "Complaints-Poor Supply". The data in the two tables do not exactly coincide; this is due to the shortage of help,, previously brought out, leaving a backlog of service pipe abandonments each succeeding year.

The number of new meters set due to new construction is given in Table "C".

TABLE "C"

METERS SET

Size Meter	1951-52	1952-53	1953-54
5/8"	1562	1523	1392
3/4"	17	40	34
1"	130	126	134
1½"	77	50	62
2"	210	216	226
3"	1	2	1
4"	-	-	-
6"	-	-	2
8"	1	2	-
Total	1998	1959	1851
% 5/8"	78.2	77.7	75.2
% 3/4"	1.4	2.0	1.8
% 1"	6.5	6.4	7.2
% 1½"	3.8	2.5	3.4
% 2"	10.5	11.1	12.2

It is of interest to note that, percentage wise, the number of 5/8" meters installed is decreasing, while 3/4" and 1" are on the increase.

The number of meters changed during the fiscal year, for all causes, but mainly "no goes", is shown in Table "D".

TABLE "D"

METER SET CHANGES

Meter Size	1951-52	1952-53	1953-54
5/8"	2837	3935	4152
3/4"	92	119	132
1"	91	96	94
1½"	73	119	79
2"	109	176	121
3"	1	-	-
4"	-	-	-
6"	-	1	-
8"	-	2	1
Total	3203	4448	4579
% 5/8"	88.7	88.5	90.5
% 3/4"	2.9	2.7	2.9
% 1"	2.9	2.2	2.1

Another table of interest, when considering the water supply situation as a whole, is the one showing the number of meters brought home and not replaced:

TABLE "E"

METERS HOME

Meter Size	1951-52	1952-53	1953-54
5/8"	591	450	444
3/4"	14	19	18
1"	45	44	27
1½"	30	16	31
2"	83	81	90
3"	-	2	1
4"	-	5	-
6"	-	-	2
8"	-	-	-
Total	763	617	613
% 5/8"	77.3	73.0	72.5
% 3/4"	1.8	3.1	2.9
% 1"	5.9	7.1	4.4

As in the previous year, old meters of many years' service and where the cost of repair is excessive, are being retired.

With the continuous remodeling of the Meter Shop, the accuracy of all repaired meters is now practically equal to that of new meters. Several pieces of equipment are still required in order to bring the Meter Shop to its best efficiency. Request for this equipment was made in the coming budget and approved. This new equipment will, in all probability, be installed before the end of 1954, and the efficiency of the operation of the Meter Shop should be greatly improved.

COMPLAINTS:

Again, as during last year, the principal complaint from consumers is "poor supply". A careful inspection of these complaints again confirms the work of previous years. They are still due to either the service being choked or the housepiping being too small, or both. A total of 918 complaints was received. As in the previous year each complaint was carefully inspected and analyzed, and every complainant notified by mail of the results. Of the total of 918 complaints received, 864 services have been ordered renewed. These complaints are tabulated in the Appendix Table No. 21.

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Due to the lack of men and equipment, all of the inadequate services as shown in Table No. 21 have not been abandoned and renewed. As a matter of fact, of the total of 2,063 "poor supply" complaints received in the last three fiscal years, 436 still remain to be done.

With the correction of the service or housepiping, or both, as the case may be, experience has shown that particular "poor pressure" complaint disappears.

ADDITIONAL PERSONNEL:

Due to the many track removal, sewer and street surfacing jobs of the Department of Public Works a critical shortage was felt in regard to the men and equipment available for the regular and extra work required. For this reason about 436 services are still to be renewed as of the end of this fiscal year. It is expected that by the end of the next fiscal year most of the track removal jobs will have been completed, thereby freeing much of our manpower and equipment.

However, it is felt that due to the growth of the City, and in order to give adequate service to the public, the service crews should be increased by two, and the main pipe crews by one, and two additional gatemen should be put on the payroll. For the proper utilization of the additional personnel, additional equipment will also be required.

Also attention should be directed to the fact that the General Foremen of Main Pipes and Services and Meters are overworked. It is impossible for either of them to perform their work properly. They must spend most of their time planning their work for each succeeding day and neglect the field inspection, or vice versa. It is therefore suggested that a new position be created, such as Supervising General Foreman, who will be in charge of both of the General Foremen.

It should be noted that three new automatic pump stations will soon be put into service, namely, Mt. Davidson, Central and Summit. In addition to these, four smaller automatic stations are contemplated. At the present time twelve such stations are in service under the care of one operating engineer. It is therefore suggested that consideration be given to the hiring of one additional operating engineer at this time. This additional operating engineer could also take care of the vacation relief, thereby eliminating the necessity of calling upon the Machine Shop for service, which is also short of help.

With the completion of the Lake Merced Pump Station, the Water Department will unquestionably be called upon to landscape the surounding area. This will call for at least one gardener. Also the people living around the

University Mound Reservoir are clamoring for the landscaping of that area around both the old and new reservoirs. This situation will require at least two additional gardeners, or a total of three gardeners.

The Machine Shop is also understaffed. In order to perform the work properly and keep all machines and equipment at the highest efficiency, one machinist and one auto machinist will be required.

There are on file, at the end of this fiscal year, 5,063 meter complaints. Most of these complaints are meter boxes improperly set, and requests for the cleaning out of the dirt and debris in the interior of the meter boxes. With the purchase of a small concrete mixer it is deemed advisable to employ on a permanent basis, a cement finisher, in order that the re-setting of the meter boxes can be done by the forces of the Water Department, the present cost therefor being excessive. It is also intended to place a thin concrete slab on the inside of the meter box below the bottom of the meter, in such locations where it is found necessary, in order to stop the filling of the meter box with dirt by the operation of gophers and worms.

P 684,371 free water in lieu of taxes.

WATER SALES DIVISION

Gross Water Sales to consumers during the fiscal year 1953-1954 were $12,839,879 including $684,371 to other Municipal Departments in lieu of taxes. Net Water Sales, after deducting allowances and refunds of $21,934, amounted to $12,817,945. This was an increase over the previous year of $313,062 or 2.50%. San Francisco Net Sales were $9,786,704 or 76.35% of the total. Suburban Net Sales were $3,031,241, being 23.65% of the total.

Recorded registration through consumers' meters totaled 5,323.2 million cubic feet for the year, an increase of 196.3 million cubic feet. Registration in San Francisco was 3,573.2 million cubic feet which was 67.125% of the total. Suburban registration was 1,750.0 million cubic feet or 32.875% of the total. Sales of water only, in San Francisco, were $7,957,058 so that the average charge per hundred cubic feet was 22.3 cents. Suburban sales for water only were $2,959,579 or an average of 16.9 cents per hundred cubic feet.

Sales to Municipal Utilities and Water Districts in the Suburban Area for resale amounted to $1,449,249, an increase of $179,588. Sales to private utilities for resale were $1,329,616, an increase of $90,881. Delivery of water through the Palo Alto Pipe Line totaled 230,475,200 cubic feet for which the revenue was $382,607.56.

Orders for new service installations for domestic use totaled 1,408. New installations for automatic sprinkler use totaled 29. Our Consumers' Serviceman made over 28,000 calls during the year which included turning on and shutting off water service and taking closing meter readings on order of our customers. The Public Utilities Commission's resolution of April 20, 1953, which amended the Department's rules to provide that applications for water supply would be accepted by telephone, has proven to be a major factor in bettering our public relations. *

The Department continues to audit all meter readings before billing and to verify usage by sending a Water Service Inspector where, for one reason or another, the readings appear to be inconsistent with the usage normally expected. Some 20,731 accounts were handled in this manner. In addition, call backs were required on 7,217 accounts where meter readings could not be obtained by the regular reader and it was not deemed advisable to issue estimated bills. Such estimated bills have been materially reduced from previous years and estimated or averaged bills covering two consecutive billing periods have been practically eliminated. Altogether, 38,861 inspections of varying degree were made during the year including those requested by customers. In connection with

these inspections, a new procedure has been instituted whereby an inspector is dispatched on the following day where the meter reader reports that any meter on his route shows continuous delivery. This procedure has elicited favorable comment from many of our customers.

There were 19,238 closing bills issued during the year. These represent bills rendered to customers moving from or selling the premises served. Bills written off as uncollectible amounted to $5,648. This loss was only 0.04% of our total Sales.

Customers' Accounts Receivable at June 30, 1954 showed a balance due the Department of $990,280. This was 74.66% of Sales for the month of June 1954 indicating that better than 25% of our June billing was paid before the end of the month. For the first time Collections averaged over $1,000,000 per month, being $12,028,090 for the fiscal year. There were 924,601 bills issued during the year of which 870,337 represented bi-monthly accounts and 54,264 were for monthly accounts.

As previously reported, the City Attorney rendered an opinion on July 1, 1952 which provided that water supplied under certain so-called reduced rate and free water contracts was actually subject to the uniform rates and charges as provided in the established Rate Schedule. In accordance with this opinion and a resolution adopted by the Public Utilities Commission, billing at regular rates was instituted on these "contract" accounts.

During the 1953-54 fiscal year, billing on these accounts at our regular rates amounted to $600,639.50. This was $53,630.08 in excess of the billing which would have been rendered under the former contract rates. In the two years since establishment of this procedure, charges at regular rates have totaled $1,203,934.21 or $115,456.04 over "contract" billing. The additional charges on all but three of the contracts have continued to be paid on an "under protest" basis. At June 30, 1954 the additional charges on the three contracts for which payment had been refused amounted to $12,635.70. Of the remainder of $102,820.34, $100,767.58 had actually been paid "under protest" and $2,052.76 not actually paid would, on the basis of previous experience, be paid.

At the time of the opinion noted above, the City Attorney also ruled that backbilling should be made on the same accounts for a period of two years. Our report last year showed that backbilling has been rendered in the amount

of $123,623.26. A subsequent ruling reduced this back-billing to $103,581.61 of which $443.14 was paid "under protest" leaving a balance due, under the backbilling, of $103,138.47. Total payments under protest, therefore, were $101,210.72 with an additional $2,052.76 to come.

Continuing with a recommendation dated February 2, 1953 by the Controller, our Claims Division has processed 165 claims in the total sum of $20,788.16 against street work contractors and others who damaged our facilities. Collections in the sum of $10,806.19, representing 91 claims, have been made. Nine claims totaling $2,632.03, found to be not proper charges, were abandoned. At June 30, 1954, 65 claims amounting to $6,365.29, were pending.

Shortly after the recommendation referred to above, the Claims Division took over the handling of 304 claims which had been on the Department's books at that time. These claims totaled $18,193.74. One hundred claims totaling $7,421.68 were compromised for $4,311.37. Thirty five claims in the sum of $2,237.93, found to be not proper charges, were abandoned. As on June 30, 1954, 169 claims, in the amount of $8,534.13, remain. However, of these, 100 claims totaling $2,726.53 have been approved for settlement by the Public Utilities Commission in the sum of $908.84. Payment of this amount was received on August 6, 1954.

During the year there were 104 claims filed against the Department as result of its operations. These were in the total amount of $414,649.83. Also filed were 45 claims totaling $50,198.71 for refund of amounts allegedly over-billed or losses allegedly sustained by parties to certain special water rate contracts which were discontinued following an opinion by the City Attorney on July 1, 1952. Seventy four claims in the total sum of $159,794.12, including 52 claims which had been filed by parties to the special water rate contracts, were pending at the beginning of the year. Altogether, therefore, the Claims Section processed, during the year, some 223 claims totaling $624,642.66. Of these, 49 claims for $297,650.14 were denied. Sixty claims totaling $20,323.61 were settled for $8,824.17. The total saving on claims denied and settled was therefore $309,149.58. Five claims filed for $40,338.52 involved automobile accidents and were turned over to our insurance carriers. Claims remaining at June 30, 1954 totaled 109 in the total amount of $266,330.39. Of these, however, 97 for $180,118.81 were in connection with water rate contracts so that only 12 claims totaling $86,211.58 were pending as result of the Department's operations.

In addition to the above Claims Section made 193 miscellaneous damage claim investigations on which no verified claims were filed with the Controller.

Although not actually a part of a formal report on facts and figures, it should be mentioned that the manner in which the employees of the Water Sales Division have performed their assignments has been the principal factor in whatever success the Division has achieved in conducting its affairs in an efficient, business like manner. Unfortunately, such success must usually be measured by the lack of complaints received regarding courtesy and general treatment of the customer. Such complaints have been few in number. Therefore, the courteous, considerate handling of the public by the employees merits commendation. *

WATER PURIFICATION DIVISION

Normal water treatment practices and adequate precautions for safeguarding the San Francisco water supply were in force throughout the year. Disinfection of all supplies was continuous and water supplied to consumers complied with the bacteriological standards established by the United States Public Health Service for drinking water purity.

Source supplies varied in chemical content from a soft mountain water, which is our major source of supply and which is now treated for corrosion control, to a relatively hard ground water supplying minor quantities. The final mixture served to consumers is moderately soft and of relatively low mineral content. In general, the water is free of tastes and odors and the quality is good for an unfiltered supply derived primarily from surface sources.

LABORATORY:

All analytical work in the fields of biology, bacteriology and chemistry, except the necessary field tests, was performed in our laboratory, located at Millbrae, which has been certified by the State Department of Public Health as an "Approved Water Laboratory for Complete Chemical and Complete Bacteriological Analyses".

Following is a tabulation which summarizes the field and laboratory tests made during the year in connection with water treatment, sanitary control, and special investigation:

Bacteriological Examinations	6747
Routine Microscopical Examinations of Algae	414
Electrical Conductivity Measurements	4295
Turbidity Measurements	3516
Partial Chemical Analyses	929
Routine Fluoride Tests	947
Color Measurements	811
Dissolved Oxygen Tests	645
Analyses to Determine Origin of Leaks	273
Complaint Investigations	28
Irrigation Water Analyses	18
Complete Mineral Analyses	8
Miscellaneous Laboratory Tests not otherwise included	848
Chlorine Residual Tests	5583
Miscellaneous Field Tests	2392

Due to increased laboratory work load and changes in Department personnel, complete mineral analyses were run on only our major sources of supply; however, partial chemical analyses on these other supplies show no appreciable change in their mineral content.

In conjunction with the State Department of Public Health, Sanitary Engineering Laboratory, bacteriological and chemical tests were run to check procedures and to determine accuracy of technics. In the great majority of check tests run there was good correlation between this laboratory's results and those of the participating state agencies.

Studies were continued on rapid methods of chemical analysis by spectrophotometric and flame spectrophotometric methods.

Numerous special investigations continue to be made for this and other divisions such as the investigation of explosive gases emitting from pipe linings, soil analyses for backfill and suitability of materials to be used in construction and operations of the Water Department. Technical assistance continues to be given various industries which have problems which they feel arise from the use of our water in their processes.

During the past year one member of our staff attended a special Army - Navy Service School for the detection of deliberate contamination of water supplies by use of nuclear fission products and bacteria.

New and replacement equipment purchased during the year included a glass washing machine for cleaning the laboratory glassware, an "Infra-Rediator" for use in the rapid concentration of liquid samples, a "Scintillation Counter" for use in conjunction with other equipment in radiological determinations, a light weight aluminum rowboat with accessories and an electrically powered portable air compressor.

CHLORINATION:

Disinfection of all supplies was adequate and continuous throughout the year, with no water being exposed to contamination between the time of last chlorination and the consumers service.

Ten of our chlorination stations operated continuously with Tesla, Calaveras and Lombard operating for 10.9 months, 6.6 months and 11.7 months respectively. The Irvington and Merced Manor Stations were not operated this year.

A total of 976,533 pounds of chlorine was used during the year, a 1.02% decrease as compared with last year's usage. Fifty four and four tenths percent (54.4%) of the total was used at the Tesla Station, 15.0% in the Alameda Division, 26.1% in the Peninsula Division and 4.5% in the City Disbribution Division. Chlorine dosages averaged 16.2 pounds per million gallons at the Tesla Station, 17.2 pounds per million gallons at the Calaveras Station, 7.2 pounds per million gallons at the Sunol Station, 6.4 pounds per million gallons at the Crystal Springs Station and 7.0 pounds per million gallons at the San Andres Stations. High chlorine dosages are necessary at our Tesla and Calaveras Stations in order to maintain adequate chlorine residuals throughout the Coast Range Tunnels and Bay Division Lines to control organisms entering with tunnel infiltration waters.

A new chlorination unit was purchased and installed at the Calaveras Station. Other new equipment for chlorine operations included a safety kit for 150 pound chlorine cylinders and a two-ton jib crane and electric hoist which has been installed at the Millbrae Yard to facilitate the safe handling of the full one-ton chlorine tanks, and permit the double decking of empty cylinders on the chlorine truck thus holding costs for demurrage to a minimum.

The program of disinfecting new pipe lines has been greatly facilitated through the use of the small two-wheel chlorination trailer purchased during the previous fiscal year. In the City Distribution System the following lines were disinfected prior to being placed in service:

550	feet	of	6	inch	pipe line
3,970	"	"	8	"	" "
18,900	"	"	12	"	" "
4,800	"	"	30	"	" "
8,350	"	"	36	"	" "
36,570					

In the Peninsula Division the sixty inch Sunset Supply Line from Burlingame to Baden in South San Francisco, a distance of approximately 20,400 feet, was disinfected. In this operation both of the portable chlorinators were utilized and the "slug" method of pushing a somewhat stronger chlorine solution than is usually required through the pipe line was employed in order to hold the costs of materials and labor to a minimum.

Before being placed in service, both sections of the new 31.5-million gallon Sutro Reservoir in San Francisco were chlorinated using a stationary chlorinator and 150 pound cylinders of chlorine temporarily moved from another reservoir chlorination station.

FLUORIDATION:

The fluoridation of approximately fifty percent of the water supplied to San Francisco was continued throughout the year. Adequate safety features are provided to prevent any possible overdosage and operations to date have proved the controls to be effective. There was no overdosage of fluoride to any water served to consumers during the year.

The Board of Supervisors has approved the extension of the fluoridation program to include all water served to San Francisco. Facilities for extending the program will soon be provided and it is anticipated that all of the water served to San Francisco will be fluoridated by the middle of the fiscal year, 1954-1955.

During the past fiscal year, a total of 181,628 pounds of sodium silicofluoride was used with 79.3% being used at the San Andres Plant and 20.7% being used at the Alemany Plant. The average dosage of sodium silicofluoride was 11.59 pounds per million gallons at the San Andres Plant and 11.94 pounds per million gallons at the Alemany Plant with an over all average of 11.66 pounds per million gallons equal to 0.85 parts per million of available fluoride. This amount added to the 0.05 ppm of natural fluoride in the water supply gave an average total fluoride of 0.90 parts per million. Actual fluoride content of the water served ranged up to 1.0 parts per million.

Alemany Station was not operated from May 12, 1954 to June 3, 1954 because of a temporary shut-down at the Alemany Pumping Station. San Andres Station was shut down from June 14, 1954 to June 23, 1954 for the annual overhaul of the fluoridation machinery.

CORROSION CONTROL:

The lime treatment plant located at Rock River Shaft in the Foothill Division tunnels for the anti-corrosion control of the soft Hetch Hetchy water was operated 10.9 months during the year, being shut down for the periods of October 15 to November 16 and November 30 to December 2, 1953, due to construction work at the Alameda Creek Siphon.

A total of 1,317,310 pounds of quicklime (CaO) was used which was a 38.5% increase as compared to last years usage. The average dosage throughout the year was 40.2 pounds per million gallons and this treatment maintained a pH of 9.1 throughout the aqueduct to Crystal Springs Reservoir when bringing in only Hetch Hetchy water and has appreciably reduced the corrosivity of the resultant mixture when other source supplies are being used. Results of treatment continue to be favorable and consumer cities along the aqueduct find the water to be much less corrosive to their pipe lines with a consequent reduction in necessary flushing of their systems as compared to the time previous to treatment.

Members of the scientific staff of the Eastman Kodak Company conferred at great lenght with the staff of this Division regarding water quality that might be expected from the Hetch Hetchy Aqueduct before deciding on the location for their new color film processing facilities now in operation on Stanford University property. This plant uses only aqueduct water and expects to ultimately use 234,000 gallons per day. As the color film process is quite sensitive this Division keeps the Eastman Kodak Company informed of any expected changes in water quality.

ALGAE CONTROL:

A total of 33,950 pounds of copper sulfate was required during the year for the control of algae activity in our local storage and impounding reservoirs. This is a 68% decrease as compared to last years usage and is 63% below the past 10 year average.

Upper and Lower Crystal Springs Reservoirs were treated in November for Aphanizomenon and Volvox; Upper Crystal Springs required 9500 pounds of copper sulfate and Lower Crystal Springs required 12,300 pounds of copper sulfate for treatment. San Andres was treated in December for Aphanizomenon requiring 7600 pounds of copper sulfate. Pilarcitos was treated in September for Ceratium and Staurastrum, in April for Staurastrum and Mallomonas and again in June for Staurastrum and Ceratium requiring a total of 4400 pounds of copper sulfate. The Stone Dam Reservoir was treated in July for Asterionella, in October for Mallomonas and again in June for Asterionella and Mallomonas requiring a total of 150 pounds of copper sulfate. The sum total of water in storage in each reservoir at times of treatment was 24.6 billion gallons.

CROSS CONNECTIONS:

The number of services to consumers having cross connections with other sources of supply on their premises which are protected from backflow by double check valve assemblies continues about the same, there being 99 in San Francisco and 54 in suburban areas.

99
54
153 Total X-connections

In addition, there are some 385 of these check valve assemblies installed in service lines to fire or water service hydrants on the water front, to protect the system against possible salt water contamination, 209 of which were originally installed and are now maintained by the Water Department. An inspection of 263 of these water front installations was made during the fiscal year. Regular inspections of critical installations are required of the consumer and reports of results are sent to this Division.

The United States Public Health Service has served notice on the Water Department that it is requiring caps on all water service hydrants on the water front to protect them from contamination. This requirement should be met in the next fiscal year in order that our facilities may be granted certification for use in interstate traffic.

INSPECTIONS:

Inspections of tunnels and pipe lines to determine conditions with respect to deposits, slime organism activity, infiltration water and corrosin were as follows: San Joaquin Valley Pipe Line, No. 1, at several locations - September 18, 1953; Irvington Tunnel at Alameda West Portal - October 21, 1953; Coast Range Tunnel at Alameda East Portal - November 11, 1953; and a portion of the Sunol Aqueduct at the Sunol Filter Galleries - March 24, 1954. The inspections in the San Joaquin Pipe Line were cooperative with the Hetch Hetchy Department. The inspection findings showed water treatment practices to be satisfactorily controlling slime organism activity which is further confirmed by the relatively few complaints from the consumers on the Bay Division Lines.

Periodic sanitary inspections of watershed areas on a limited scale were made for protective purposes.

WATER QUALITY:

The dissolved chemical content of the water served to consumers from the Peninsula Reservoirs decreased approximately ten percent as compared with water served last year, while the dissolved chemical content of water served to consumers from the Bay Division Lines decreased about forty percent as compared to water served last year. The changes in chemical content of the water served from the Bay Crossing Lines are due primarily to differences in proportion of water entering from Calaveras and Hetch Hetchy and not from changes in the chemical content of these sources. The Bay Division Lines carried: A Hetch Hetchy - Calaveras mixture for the periods

July 1 to October 15 and April 30 to June 30; Calaveras water only for the periods October 15 to November 16 and November 30 to December 1; and Hetch Hetchy only or a Hetch Hetchy - ground water mixture during the remainder of the year.

All water served complied with the bacteriological standard established by the United States Public Health Service and objectionable tastes and odors were absent. Harmful elements such as arsenic, lead and hexavalent chromium were either absent or present in trace amounts only and elements such as copper, iron, zinc, magnesium, sulfate and chloride were well within the safety limits for drinking water. Iodine content was low, but not entirely absent, and boron was present only in low concentrations.

The hardness of the water served from the San Andres Reservoir ranged from 53 ppm to 68 ppm, with an average of 58.5 ppm or 3.42 grains per gallon. The pH ranged from 7.3 to 7.8 with an average of 7.58. The alkalinity ranged from 46 ppm to 60 ppm with an average of 51.0 ppm; the chlorides ranged from 7ppm to 11 ppm with an average of 9.0 ppm; and the turbidities ranged from 0.5 ppm to 4.0 ppm with an average of 1.2 ppm. Water temperatures ranged from 50° to 69° F with an average of 59.1° F. The dissolved oxygen content ranged from 8.0 ppm to 10.7 ppm with an average of 9.6 ppm or 95% of saturation.

The hardness of the water served from the Crystal Springs Reservoir ranged from 38 ppm to 59 ppm, with an average of 47.7 ppm or 2.79 grains per gallon. The pH ranged from 7.3 to 7.8 with an average of 7.52. The alkalinity ranged from 33 ppm to 51 ppm with an average of 42.8 ppm; the chlorides ranged from 5 ppm to 8 ppm with an average of 5.9 ppm; and the turbidities ranged from 0.5 ppm to 4.0 ppm with an average of 1.0 ppm. Water temperature ranged from 52° to 70° F with an average of 60.2 F. The dissolved oxygen content ranged from 7.8 ppm to 10.1 ppm with an average of 9.1 ppm or 91% of saturation.

The hardness of the water served from the Bay Crossing Lines ranged from 14 ppm to 112 ppm, with an average of 33.4 ppm or 1.95 grains per gallon. The pH ranged from 7.6 to 9.3 with an average of 8.89. The alkalinity ranged from 14 ppm to 103 ppm with an average of 31.1 ppm; the chlorides ranged from 1 ppm to 14 ppm with an average of 3.3 ppm; and the turbidities ranged from 0.5 ppm to 4.5 ppm with an average of 0.8 ppm. Water temperatures ranged from 47 to 70° F with an

average of 55.2°F. The dissolved oxygen content ranged from 7.1 ppm to 11.5 ppm with an average of 10.0 ppm or 94% of saturation.

COMPLAINTS:

Dirty water and bad taste continue to be major sources of water quality complaints and only a complete flushing of the system plus filtration of all water and an adequate reservoir cleaning program would eliminate them. The fluoridation program continues to be a minor source of complaints, both pro and con, and many inquiries regarding fluoridation at specific locations are answered by this Division. In line with our courtesy policy, aid was given to our consumer cities in the investigation of water quality complaints.

MISCELLANEOUS:

Continued measurements of infiltration water in the Twin Peaks Tunnel fail to show any relationship between possible seepage from Sutro Reservoir and the amount of infiltration in the Twin Peaks Tunnel.

Continuation of the program to determine the source and path of travel of the remaining seepage water into the eight foot tunnel at Calaveras Dam has shown that more salt solution tests are advisable and that the leak flow must be observed for an extended period of time before the degree of improvement in leak flow, due to grouting, can be computed accurately.

An informal contract was completed which provided much needed surfacing on portions of the access roads to our San Andres water treatment plants.

In an effort to provide more positive leak determinations, a revised leak analysis report has been instituted. This report provides the Laboratory with a field report and makes it easier to correlate the data from past leak investigations and give a more valuable opinion on future leak sample analyses.

About fifty percent of one employee's time was spent in the experimental development and application of methods to determine causes of leaks in concrete lines and covered distribution reservoirs; and testing methods of repairing areas which show possible leakage.

A number of complete chemical analyses were made for the Hetch Hetchy Department during the year in order that an accurate record may be maintained of the quality of certain river waters in the San Joaquin Valley.

CHARTS AND TABLES:

The charts included cover water quality and algae activity for the fiscal year and the monthly chlorine usage over a five year period. The tables included list complete mimeral analyses of source and consumer supplies, annual chlorine usage at our various stations and summaries of results of bacteriological examinations.

OPERATION OF CHLORINATION STATIONS

1953-54

Location		Total Operating Time (months)	Chlorine Used (lbs.)	
Division	Station		Station Total	Division Total
Coast Range H.H.W.S.	Tesla	10.9	531,466	531,466
Alameda	Calaveras	6.6	135,510	
	Sunol Aqueduct	12.0	11,198	
	Irvington	0.0	0	146,708
Peninsula	Crystal Springs	12.0	147,593	
	San Andres #1	12.0	12,102	
	San Andres #2	12.0	84,948	
	San Andres #3	12.0	9,595	254,238
City Distribution	College Hill	12.0	7,642	
	Lombard	11.7	470	
	University Md.			
	Line #1	12.0	14,790	
	Line #2	12.0	12,805	
	Sunset	12.0	8,291	
	Francisco	12.0	123	
	Merced Manor	0.0	0	44,121
			Total	976,533

SAN FRANCISCO WATER DEPARTMENT

MINERAL ANALYSES - SOURCE SUPPLIES

(Results expressed in parts per million, except pH and conductivity)

SOURCE	Hetch-Hetchy at Alameda E. Portal	Calaveras Reservoir	Sunol Filters	Pleasanton Wells	Pilarcitos Reservoir
DATE SAMPLED	5/25/53	5/25/53	5/25/53	5/26/53	5/26/53
Conductivity (K x 10^5ohm-1)	5.4	21.3	54.9	43.3	16.0
pH	9.2	7.8	7.6	7.2	7.5
Total Solids (Calculated)	34	130	366	280	97
Silica (SiO_2) (Colorimetric)	5.0	8.2	12.0	11.6	11.6
Sodium (Na)	5.1	9.8	33.2	27.2	13.6
Calcium (Ca)	5.5	26.3	66.4	45.9	13.7
Magnesium (Mg)	0.5	8.4	23.8	21.9	4.5
Iron, Dissolved (Fe)	0	0	0	0	0.01
Aluminum (Al)	0.02	0.01	0.01	0.01	0.01
Manganese (Mn)	0	0	0	0	0
Boron (B)	0.12	0.09	0.21	0.07	0.09
Fluoride (F)	0.15	0.20	0.10	0.10	0.20
Carbonate (CO_3)	1.8	0	0	0	0
Bicarbonate (HCO_3)	15.9	107	264	222	60
Sulphate (SO_4)	3.6	16.6	69.6	34.3	7.9
Chloride (Cl)	4	8	28	28	16
Nitrate (NO_3)	0.01	0.01	2.6	1.6	0.01
Hardness, Calculated ($CaCO_3$)	16	100	264	205	53
Alkalinity ($CaCO_3$)	17	88	216	182	49

Exact analyses of run-off into Crystal Springs and San Andres Reservoirs cannot be made as water from all sources in use mixes in these reservoirs.

SAN FRANCISCO WATER DEPARTMENT

TYPICAL ANALYSES OF WATERS SERVED TO CONSUMERS

(Results expressed in parts per million, except pH and conductivity)

SOURCE	Crystal Springs Lines	San Andres Lines	Bay Crossing Lines *	Stone Dam Reservoir
Conductivity (K x 10^5mho/cm)	13.1	14.5	10.7	32.9
pH	7.5	7.7	8.3	8.1
Total Solids	80	78	66	192
Silica (SiO_2)	10.0	4.4	6.1	13
Sodium (Na)	6.8	8.2	6.7	20.2
Calcium (Ca)	15.6	15.8	12.5	32
Magnesium (Mg)	3.1	3.4	3.1	11.7
Iron, Dissolved (Fe)	0.02	0.02	0	0
Aluminum (Al)	0	0.02	0.02	0.02
Maganese (Mn)	0	0	0	0
Boron (B)	0.11	0.09	0.11	0.09
Fluoride (F)	0.05	0.95	0.15	0.02
Carbonate (CO_3)	0	0	1.2	0
Bicarbonate (HCO_3)	62	59	46	133
Sulphate (SO_4)	8.3	8.3	7.9	21.9
Chloride (Cl)	6	9	4	28
Nitrate (NO_3)	0.01	0.01	0.01	0.01
Hardness, Calculated ($CaCO_3$)	52	53	44	128
Alkalinity ($CaCO_3$)	51	49	38	109

Column 1 Supplies downtown, commercial, waterfront areas of the City, and Peninsula communities as far south as San Carlos.
Column 2 supplies residential areas of the City.
Column 3 supplies Peninsula communities south of San Carlos and some communities in Alameda County. (*Average analyses of water served; water ranged from Hetch Hetchy only to Calaveras only.)
Column 4 supplies Coast County Water District.

MONTHLY SUMMARIES OF BACTERIOLOGICAL ANALYSES

SAMPLES COLLECTED FROM THE SAN FRANCISCO DISTRIBUTION SYSTEM

IN ACCORDANCE WITH CERTIFICATION REQUIREMENTS

Month	Number of Samples	Coliform Test - 10 ml Portions			Samples Positive (3 or More Tubes	
		Number of Tubes	Tubes Positive	Per Cent Positive	Number Positive	Per Cent Positive
1953						
July	369	1845	103	5.6	19	5.1
August	360	1800	37	2.1	6	1.7
September	325	1625	9	0.6	0	0.0
October	358	1790	34	1.9	4	1.1
November	359	1795	21	1.2	2	0.6
December	369	1845	8	0.4	0	0.0
1954						
January	336	1680	4	0.2	1	0.3
February	328	1640	4	0.2	0	0.0
March	369	1845	3	0.2	0	0.0
April	361	1805	3	0.2	0	0.0
May	336	1680	5	0.3	0	0.0
June	405	2025	12	0.6	2	0.5

BACTERIOLOGICAL ANALYSES

ANNUAL SUMMARY OF RESULTS

RAW WATERS - SOURCES AND RESERVOIRS*

Origin of Sample	Agar Count No. per ml			Coliform Group 10 ml Portions			Samples		
	Min.	Max.	Av.	No. Exam.	No. Pos.	% Pos. Yr.	No. Exam.	No. Pos.	% Pos. Yr.
Moccasin Reservoir	3	5000	560	255	207	81.2	51	45	88.3
Tesla Portal	1	5000	4	200	5	2.5	40	0	0
Calaveras Reservoir	1	250	13	395	140	35.5	79	24	30.4
Sunol Filters	1	240	2	260	136	52.4	52	26	50.0
Pleasanton Wells	1	5	2	40	25	62.5	8	5	62.6
Upper Crystal Springs Res.	1	160	2	255	98	38.4	51	17	33.3
Lower Crystal Springs Res.	1	540	9	520	284	54.7	104	52	50.0
San Andres Reservoir	1	220	9	520	429	82.5	104	84	80.8
Pilarcitos Line	1	75	2	260	94	36.1	52	15	28.8
Stone Dam Reservoir	1	200	5	260	234	90.0	52	48	92.4
Lombard Reservoir	1	54	1	520	280	53.9	104	54	52.0
University Mound Res. #1	1	28	1	520	122	23.5	104	25	24.5
University Mound Res. #2	1	108	1	520	57	11.0	104	7	6.5
Sunset Reservoir	1	8	1	515	15	2.9	103	2	1.9
College Hill Reservoir	1	94	2	520	201	38.7	104	38	36.5
Lake Honda Reservoir**	1	15	1	130	40	30.8	26	8	30.7
Lake Merced N.	1	360	7	130	121	93.1	26	25	96.2
Lake Merced S.***	1	400	14	130	120	92.4	26	24	92.3
				M. P. N.					
				Min.	Max.	Av.			
Laguna Creek	10	5000	430	190	24000	11900	26	26	100
Alameda Creek	1	2000	32	38	24000	9900	50	50	100
San Antonio Creek	1	450	36	240	24000	5910	16	16	100

* - Includes all distribution reservoirs with chlorination facilities operating at the outlet.

** - Standby purpose only.

*** - Emergency standby source.

M.P.N. - Most probable number per 100 ml.

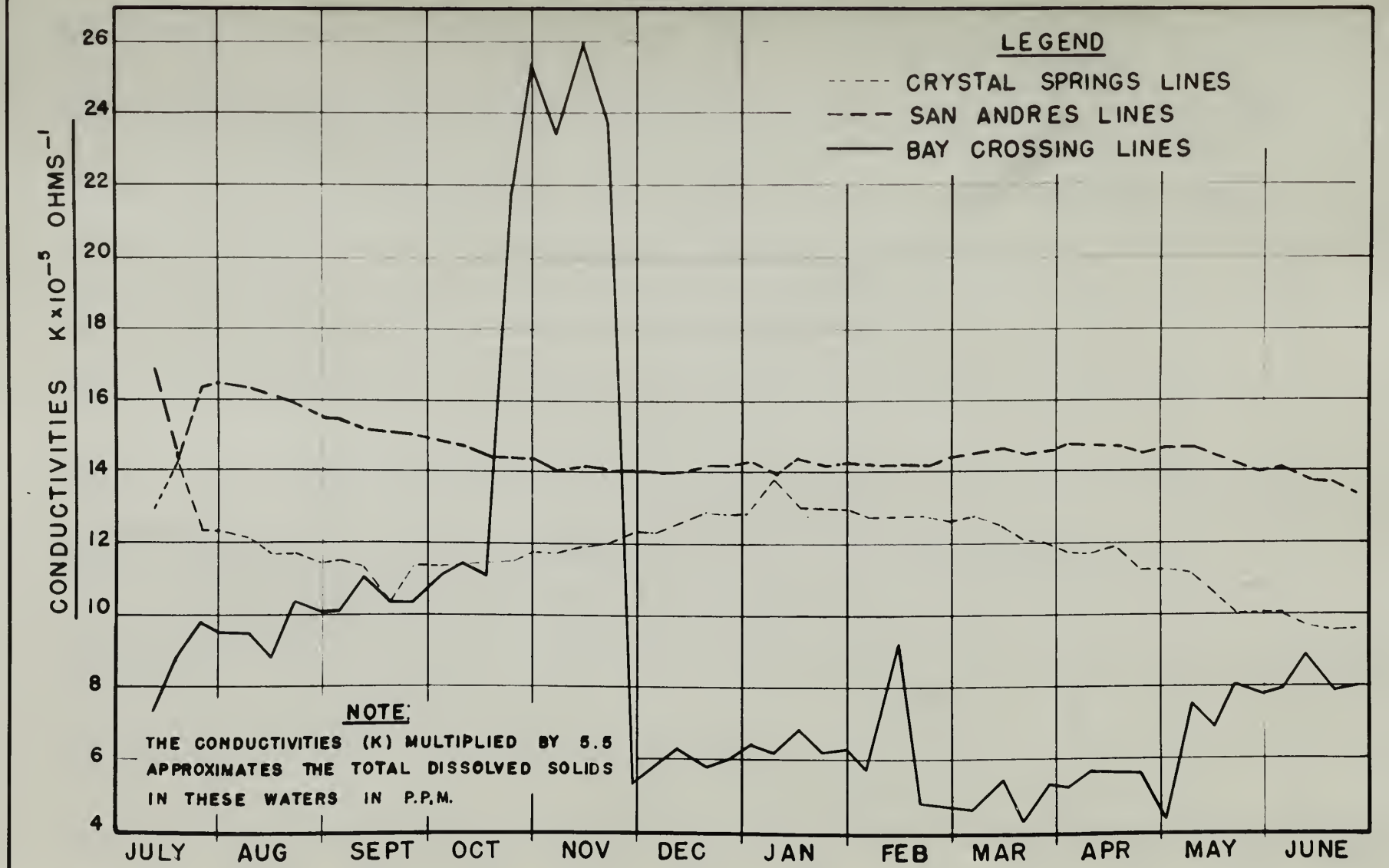
BACTERIOLOGICAL ANALYSES

ANNUAL SUMMARY OF RESULTS

TREATED WATERS

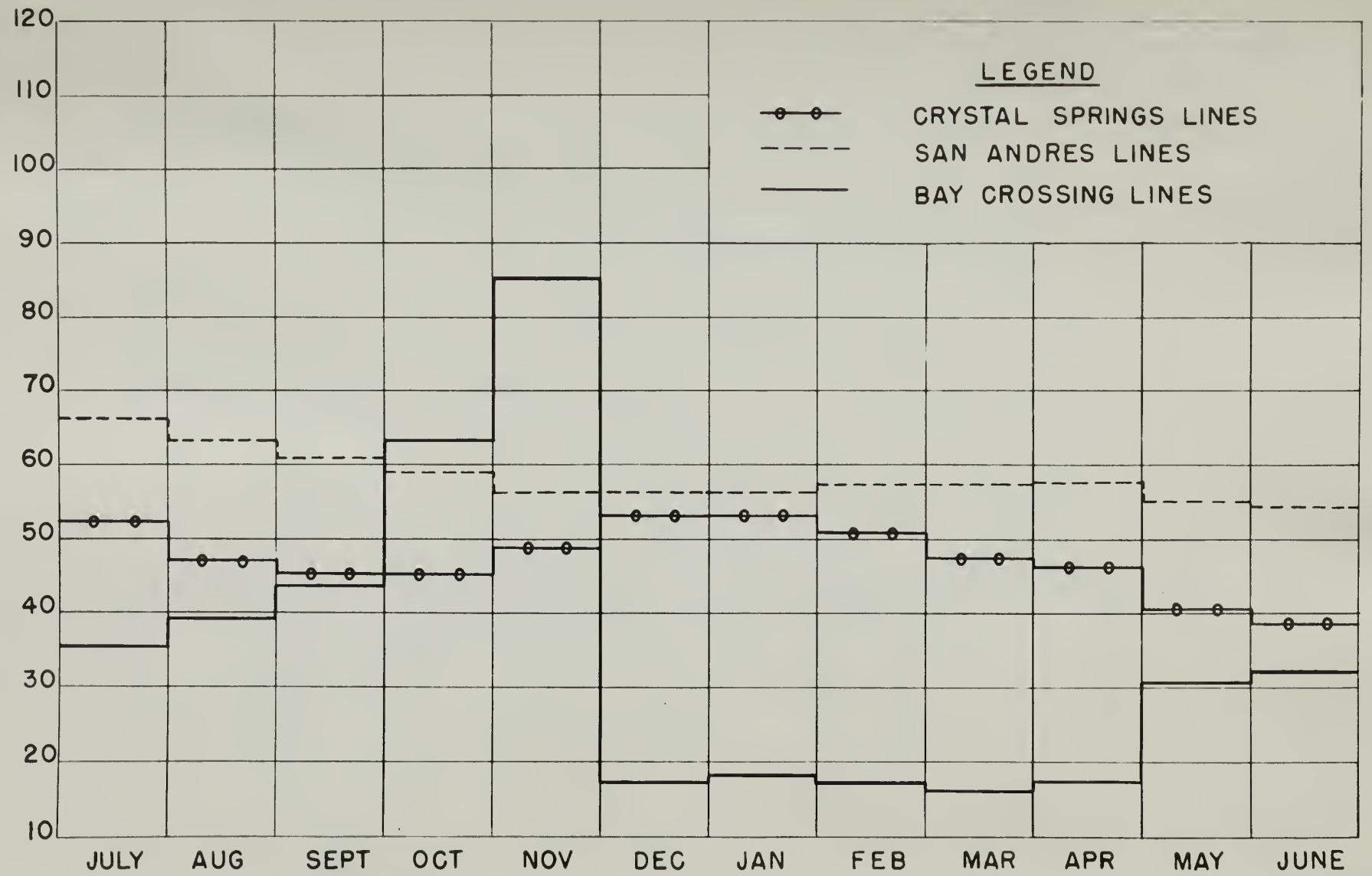
Origin of Sample	Agar Count No. per ml			Coliform Group 10 ml Portions			Samples		
	Min.	Max.	Av.	No. Exam.	No. Pos.	% Pos. Yr.	No. Exam.	No. Pos.	% Pos. Yr.
Alameda East Portal	1	200	5	240	0	0	48	0	0
Calaveras Pipe Line	1	16	2	150	0	0	30	0	0
Sunol Aqueduct	1	15	3	260	2	0.8	52	0	0
Irvington Pump Station									
Sunol Town Supply	1	81	5	520	3	0.6	104	0	0
Bay Crossing Lines	1	30	9	1550	5	0.3	310	1	0.3
Palo Alto Pipe Line	1	40	10	780	3	0.4	156	0	0
Alameda Line, Belmont	1	3	1	520	4	0.8	104	0	0
San Francisco Airport	1	36	2	520	3	0.6	104	0	0
Crystal Springs Line #1	1	10	2	1560	19	1.2	312	2	0.6
Crystal Springs Line #2	1	22	2	1560	17	1.1	312	4	1.3
San Andres Line #1	1	13	2	1560	3	0.2	312	0	0
San Andres Line #2	1	19	2	1545	6	0.4	309	1	0.3
San Andres Line #3	1	10	2	520	0	0	104	0	0
Univ. Md. Inlet #1	1	3	1	520	7	1.3	104	1	1.0
Univ. Md. Inlet #2	1	7	1	520	0	0	104	0	0
Univ. Md. Outlet #1	1	4	1	520	0	0	104	0	0
Univ. Md. Outlet #2	1	6	1	445	1	0.2	89	0	0
Univ. Md. System #1	1	4	1	515	4	0.8	103	1	1.0
Univ. Md. System #2	1	24	2	520	20	3.8	104	3	2.9
Univ. Md. System #3	1	38	2	520	0	0	104	0	0
Univ. Md. System #4	1	30	2	520	11	2.1	104	2	1.9
Univ. Md. System #5	1	38	2	520	20	3.8	104	4	3.9
Univ. Md. System #6	1	50	2	505	14	2.8	101	3	3.0
Francisco Outlet	1	30	2	520	0	0	104	0	0
College Hill Trans. System	1	7	1	490	2	0.4	98	0	0
College Hill Outlet	1	9	1	520	0	0	104	0	0
College Hill System #1	1	120	3	520	2	0.4	104	0	0
College Hill System #2	1	9	1	520	0	0	104	0	0
Sunset Trans. System	1	22	2	520	26	5.0	104	4	3.9
Sunset Inlet	1	9	1	520	0	0	104	0	0
Sunset Outlet	1	3	1	520	2	0.4	104	0	0
Sunset System #1	1	52	2	520	0	0	104	0	0
Sunset System #2	1	3	1	520	0	0	104	0	0
Forest Hill System	1	3	1	520	0	0	104	0	0
Potrero Heights System	1	36	2	520	51	9.8	104	0	0
Lombard System	1	25	3	510	6	1.2	102	1	1.0
Merced Manor Res.	1	8	1	520	0	0	104	0	0
Merced Manor System	1	4	1	520	4	0.8	104	0	0
Stanford Heights Res.	1	30	2	520	10	1.9	104	0	0
Stanford Heights Sys. #1	1	8	1	520	10	1.9	104	1	1.0
Stanford Heights Sys. #2	1	30	2	520	6	1.2	104	0	0

ELECTRICAL CONDUCTIVITIES OF WATER DELIVERED TO CONSUMERS
1953-1954

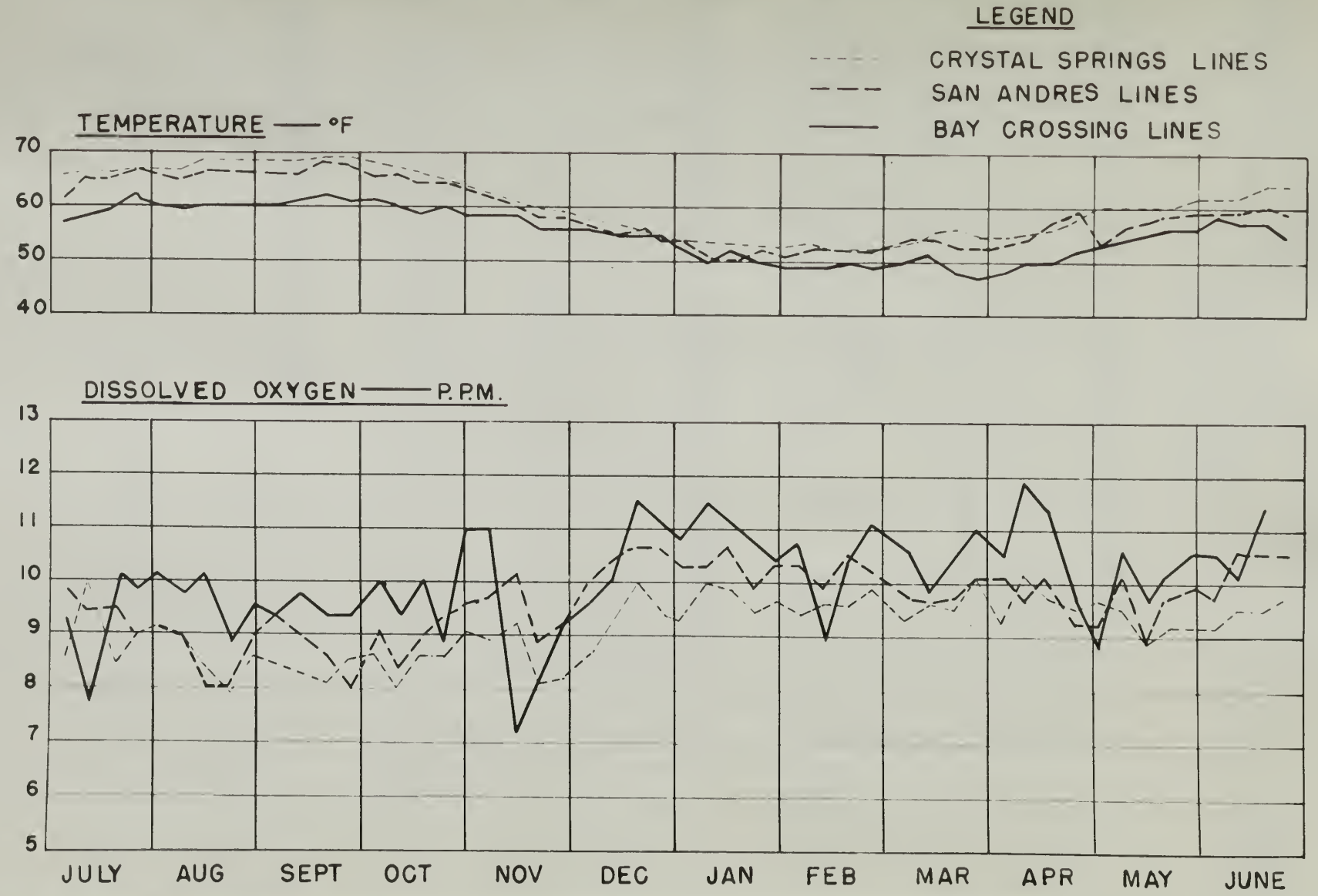


HARDNESS OF WATER DELIVERED TO CONSUMERS 1953–1954

(MONTHLY AVERAGES—PARTS PER MILLION AS $CaCO_3$)



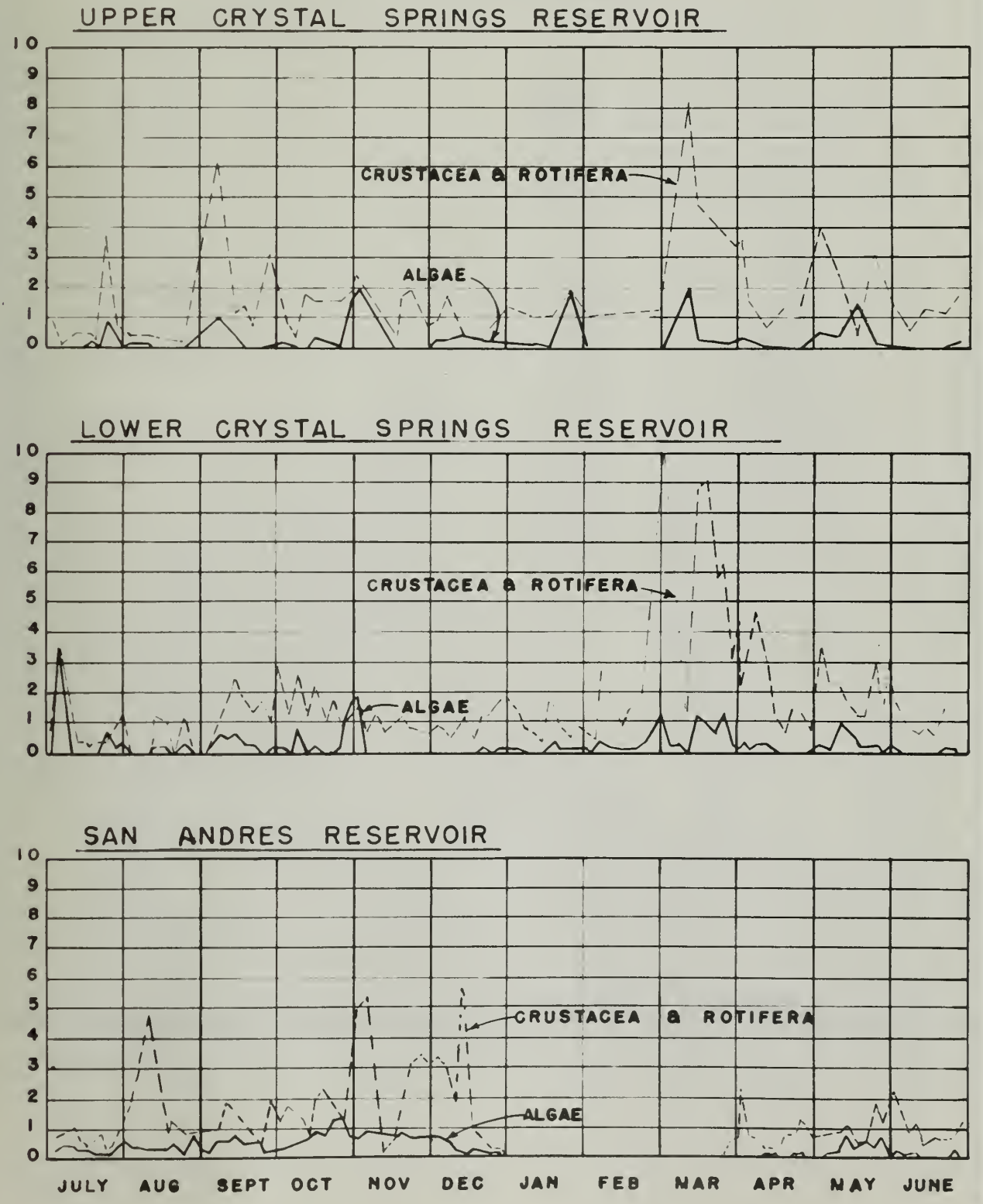
TEMPERATURE AND DISSOLVED OXYGEN OF WATER DELIVERED TO CONSUMERS 1953—1954



PENINSULA RESERVOIRS

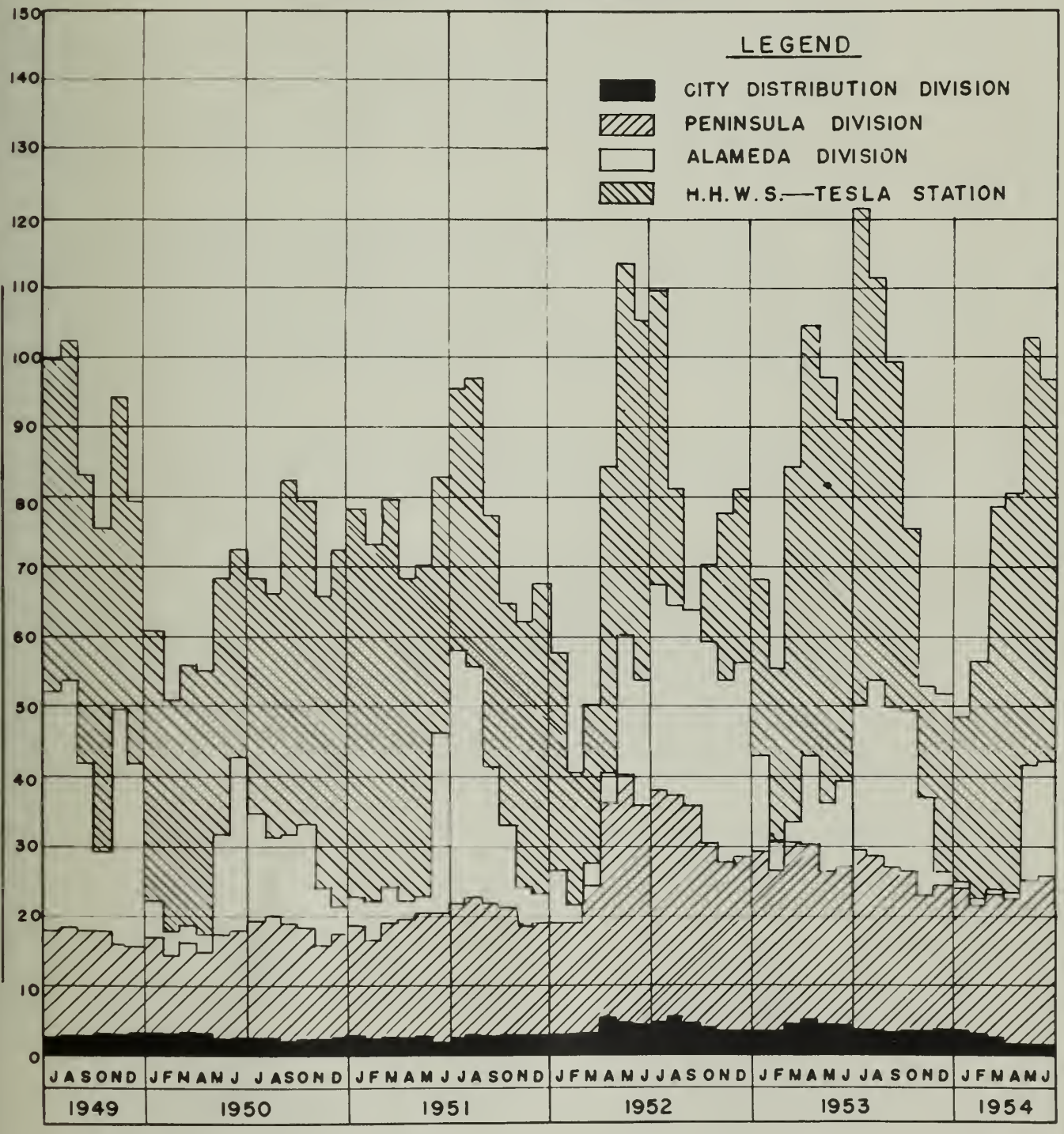
MICROSCOPICAL ORGANISMS C.C. PER CU. METER

1953— 1954



MONTHLY CHLORINE USAGE IN WATER SUPPLY SYSTEM

(PAST FIVE YEAR COMPARISON)


LEGEND
CITY DISTRIBUTION DIVISION
PENINSULA DIVISION
ALAMEDA DIVISION
H.H.W.S.—TESLA STATION
CHLORINE USAGE PER MONTH—THOUSANDS OF POUNDS
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J J A S O N D | J F M A M J
1949 | 1950 | 1951 | 1952 | 1953 | 1954

ENGINEERING DIVISION

The work of the Engineering Division, during the past year, was primarily concerned with the preparation of plans, specifications, engineering studies, reports, estimates of cost, inspection of contruction and in some cases the supervision of maintenance work. Various other services of a continuing nature were performed during the year including the preparation of property descriptions, revocable permit and the stating of conditions for land transactions; the maintenance of maps and records and the furnishing of photostatic and photographic service to all city owned utilities.

Plans and specifications were prepared for 39 formal and 9 informal Water Department contracts for a total estimated construction cost of $2,200,000. Engineering supervision and inspection services were provided for $1,720,000 worth of contract work actually completed during the year. Of the 37 formal contracts for which plans and specifications were prepared during the fiscal year 1953-54, 20 were for water main extensions.

One of these extensions was awarded to the Water Department in an amount totaling $25,809.50, and was completed during the year at a cost of $17,684.67, or $8,124.83 less than the bid price.

A survey of proposed capital improvements to the water system was made, in connection with budgetary and city planning purposes, for the period beginning July 1, 1954, and ending June 30, 1961. Water Department requirements for this period were estimated at some $17,800,000 worth of improvements having varying degrees of urgency. A number of the more essential projects programed to start in that time and for which funds are needed in whole or in part include the following projects:

Project	Total Estimated Cost July 1, 1955 to June 30, 1961
Cathodic Electrolysis Erosion Protection	$ 120,000.00
Balboa Reservoir - One Basin	2,500,000.00
Corporation Yard	1,000,000.00
Portions of Crystal Springs Pipe Line No. 3	6,960,000.00
Crystal Springs Aqueduct	1,500,000.00
San Andres Pumps	350,000.00
Sunset Reservoir - So. Basis	3,900,000.00
Bay Division Pipeline No. 4	14,000,000.00

Negotiations for exchange of right-of-way and relocation of Crystal Springs Pipelines No. 1 and 2 around Guadalupe Marsh near Brisbane were completed and surveys for plans and specifications started.

Construction was started on the 78 inch pipeline from Crystal Springs Dam to a point near Hillsborough Bridge. Investigations and surveys were made for a continuation of this line to Burlingame. Part of this proposed project will provide capacity for both Sunset Supply Line and Crystal Springs Pipeline No. 3 and will require some 5,000 feet of tunnel. Approximately 900 feet below the tunnel outlet the Sunset Supply Line and Crystal Springs Pipeline No. 3 will continue as seperate pipelines.

Plans and specifications were completed and construction started on Summit Reservoir. The contractor discontinued operations in late December pending the findings of a study by a consulting geologist prompted by unexpected ground conditions encountered during early excavation. Some revisions were required in the subbase floor slab and footing designs and work was recontinued in April.

Lake Merced pumping station was completed and operated a part of the time between May 14, 1954 and June 3, 1954 pumping during that time 297.4 million gallons of water.

The study of electrolytic action on the Department's pipelines has been carried on during the year under the supervision of the Superintendent of the City Distribution Division.

Studies show the current developed in the Bay Division Pipelines to be generated by galvanic action resulting from pipelines passing through different types of soil having variable dissolved salt and/or moisture content. Five previously installed cathodic stations were put into service together with two newly installed stations on the Bay Division Pipelines. They were installed at Newark, Ravenswood and Adobe Flats (west of Redwood City). The stations consist of rectifiers with carbon anodes as ground beds.

The transmission pipes are also affected by stray current. The influence of stray current from San Francisco can be detected as far south as San Mateo. To eliminate this type of current is extremely complex due to the network of cross connections and large services which act as paths for the current to follow. A detailed study of the pipe system is under way to determine what corrective measures should be taken to overcome damage to the pipelines by this stray current.

A brief description of work performed under contract during the fiscal year follows:

FORMAL CONTRACTS:

1. Additions to City Pipe System

In all contracts involving the laying of cast iron or transite pipe or the installation of services, the Contractor is required to obtain the pipe and fittings from the Water Department. The cost of this material, of connections made by the department's forces, and of engineering and inspection are included in the following stated contract costs. In cases where the Water Department acts as the Contractor the cost given is the actual cost of the completed work.

Extensions and replacements to the Department's distribution grid system are made under contract, the Department furnishing all necessary pipe, fittings and services material. The value of these items, and the engineering and inspection costs are set up in the contract bid sheets in a manner so that the "bid total" includes the cost of furnished items, engineering and inspection, and the summation represents the total cost to the Department for the facility. On most of this class of work the Water Department submits a bid and does the work if its bid is the lowest of those received.

Contract No. 607 - A - For the laying of 2,076 feet of 8 inch cast iron main and the installation of pumping equipment in the Mount Davidson Area. The contract was awarded to San Francisco Water Department on October 20, 1952 and was completed on September 8, 1953 at a cost of $17,684.67.

Contract No. 641 - For the laying of 4,836 feet of 30 inch steel mains from Broadway and Montgomery Streets to Columbus Avenue and Bay Street. The contract was awarded to Western Plumbing and Heating Company and W. Lenkeit, Joint Venture, on March 9, 1953 and was completed on December 2, 1953 at a cost of $148,516.89.

Contract No. 642 - For the laying of 1,350 feet of 12 inch cast iron mains in Key Avenue and across Freeway from 3rd Street to San Bruno Avenue. The contract was awarded to Coast Pipe Line Contractors on April 20, 1953 and completed on August 25, 1953 at a cost of $16,427.36.

Contract No. 644 - For the laying of 448 feet of 6-inch and 786 feet of 8-inch and 328 feet of 16-inch cast iron mains in Junipero Serra Boulevard, Santa Anna Avenue and in Kirkham Street. The contract was awarded to Fred T. Fairey on April 20, 1953 and completed on July 13, 1953 at a cost of $15,435.61.

Contract No. 649 - For the laying of 756 feet of 6-inch and 756 feet of 8-inch cast iron mains in Kieth Street, Le Conte Avenue and Bayshore Boulevard. The contract was awarded to Coast Pipe Line Contractors on April 20, 1953 and completed on August 17, 1953 at a cost of $11,474.29.

Contract No. 650 - For the installation of 13 services and the laying of 659 feet of 6-inch and 223 feet of 8-inch cast iron mains in Lawton Heights Subdivision. The contract was awarded to Coast Pipe Line Contractors on June 1, 1953 and completed on August 27, 1953 at a cost of $4,077.23.

Contract No. 652 - For the installation of 42 services and the laying of 675 feet of 6-inch and 213 feet of 8-inch cast iron mains in Corwin and Douglass Street. The contract was awarded to E. J. Treacy on May 4, 1953 and completed on August 5, 1953 at a cost of $6,296.55.

Contract No. 654 - For the laying of 323 feet of 6-inch and 913 feet of 8-inch cast iron mains in Westwood Park Area (Sutro Project.) The contract was awarded to Michael Murphy, Jr. on May 25, 1953 and completed on September 11, 1954 at a cost of $17,610.47.

Contract No. 656 - For the installation of 89 services and the laying of 570 feet of 6-inch transite and 4,083 feet of 8-inch cast iron mains in southern portion of Lakeshore Country Club Acres. The contract was awarded to Fred T. Fairey on June 15, 1953 and completed on July 27, 1953 at a cost of $21,480.90.

Contract No. 657 - For the installation of 25 services and the laying of 930 feet of 8-inch cast iron mains in Kirkham Street and in 17th Avenue (Sutro Project). The contract was awarded to Michael Murphy, Jr. on June 15, 1953 and completed on September 28, 1953 at a cost of $8,102.35.

Contract No. 658 - For the installation of 2 services and the laying of 45 feet of 2-inch, 84 feet of 3-inch and 595 feet of 6-inch cast iron mains in Charter Oak Avenue between Industrial and Helena Streets. The contract was awarded to H. T. Treacy on June 1, 1953 and completed on July 10, 1953 at a cost of $2,944.82.

Contract No. 661 - R - For the installation of 87 services and the laying of 994 feet of 6-inch and 1,503 feet of 8-inch cast iron mains in Thrift, Faxon, Baker, Hyde and Green Streets (Sutro Project). The contract was awarded to Fred T. Fairey on August 31, 1953 and completed on November 11, 1953 at a cost of $19,283.60.

Contract No. 662 - For the laying of 1,094 feet of 8-inch and 293 feet of 12-inch cast iron mains in Skyline Boulevard from Lakeshore Drive to Fort Funston. The contract was awarded to E. J. Treacy on July 20, 1953 and was completed on September 15, 1953 at a cost of $8,616.01.

Contract No. 663 - For the laying of 156 feet of 4-inch, 7,452 feet of 12-inch and 1,519 feet of 16-inch cast iron mains in 34th Avenue from Ulloa to Judah Street and in Judah Street from 34th Avenue to 29th Avenue. The contract was awarded to Lowrie Paving Company on December 21, 1953 and completed on March 29, 1954 at a cost of $88,198.33.

Contract No. 668 - For the laying of 30-inch steel main in 20th Avenue from Kirkham Street to Golden Gate Park. The contract was awarded to M & K Corporation on March 29, 1954 at an estimated bid price of $61,462.50. On June 30, 1954 the work was 65% completed.

Contract No. 669 - For the installation of 29 services and the laying of 394 feet of 4-inch, 250 feet of 8-inch and 463 feet of 12-inch cast iron mains in Grand View Terrace, Clementina and Army Streets. The contract was awarded to Fred T. Fairey on November 2, 1953 and was completed on December 28, 1953 at a cost of $9,550.63.

Contract No. 670 - For the laying of 33 feet of 4-inch and 4,441 feet of 12-inch cast iron main in Ocean and Onondaga Avenues from Phelan Avenue to Mission Street. The contract was awarded to Fred T. Fairey on April 12, 1954 and was completed on June 18, 1954 at a cost of $35,400.00.

Contract No. 674 - For the installation of 78 services and the laying of 584 feet of 6-inch, 1,323 feet of 8-inch and 1,304 feet of 12-inch cast iron mains in Golden Gate Heights. The contract was awarded to Fred T. Fairey on January 25, 1954 and completed on March 24, 1954 at a cost of $23,445.24.

Contract No. 675 - For the installation of 18 services and the laying of 340 feet of 6-inch and 156 feet of 8-inch cast iron mains in Alemany Boulevard and Restani Way. The contract was awarded to Fred T. Fairey on January 4, 1954 and completed on February 24, 1954 at a cost of $2,891.74.

Contract No. 676 - For the installation of 52 services and the laying of 1,096 feet of 6-inch cast iron mains in Greenwich Street between Jones and Taylor Streets and in Goettingen Street between Ward and Ordway Streets. The contract was awarded to Pat Barkley on February 15, 1954 and completed on April 30, 1954 at a cost of $10,420.66.

Contract No. 677 - For the installation of 52 services and the laying of 9 feet of 4-inch, 575 feet of 6-inch, 1,291 feet of 8-inch and 464 feet of 12-inch cast iron mains in Midtown Terrace No. 2. The contract was awarded to H. T. Treacy on March 1, 1954 and completed on April 27, 1954 at a cost of $13,770.87.

Contract No. 679 - For the installation of 43 services and the laying of 603 feet of 4-inch and 515 feet of 6-inch cast iron mains in La Salle, Moscow and Silliman Streets. The contract was awarded to E. J. Treacy on April 12, 1954 and completed on June 8, 1954 at a cost of $6,628.26.

Contract No. 681 - For the laying of 672 feet of 8-inch cast iron main in the Utility Easement crossing Bayshore Freeway between McKinley and Gillette Streets. The contract was awarded to Fred T. Fairey on May 3, 1954 and completed on June 30, 1954 at a cost of $ 4,659.39.

Contract No. 682 - For the installation of 24 services and the laying of 80 feet of 4-inch, 450 feet of 6-inch and 520 feet of 8-inch cast iron mains in Putman Street between Jarboe and Tompkins Avenues and in Freeway Access Road between Vermont and Kansas Streets. The contract was awarded to Fred T. Fairey on May 24, 1954 at an estimated bid price of $7,420.70. The contract work was 25% completed as of June 30, 1954.

Contract No. 683 - For the laying of 41 feet of 2-inch, 29 feet of 3-inch, 152 feet of 4-inch, 648 feet of 6-inch, and 1,167 feet of 8-inch cast iron mains in Potrero Annex Housing Project. The contract was awarded to Fred T. Fairey on June 14, 1954 at an estimated bid price of $13,102.10. As of June 30, 1954 no work has been started on this contract.

2. Additions to Supply and Transmission Facilities:

Contract No. 578 - For the construction of the 60-inch Sunset Supply Line - Burlingame to Millbrae Section. The contract was awarded to M & K Corporation on March 9, 1953 and was completed on April 16, 1954 at a cost of $1,141,615.70.

Contract No. 610 - For the construction of the Alameda Creek Siphon No. 2. The contract was awarded to Stolte, Inc. on February 24, 1953 and completed on December 31, 1953 at a cost of $510,243.79.

Contract No. 647 - For the construction of the 60-inch Sunset Supply Line - Millbrae to Baden Section. The contract was awarded to Peter Sorensen on May 4, 1953 and completed on May 5, 1954 at a cost of $920,782.60.

Contract No. 653 - For the construction of the 36-inch steel transmission main from Lake Merced Pumping Station to 23rd Avenue and Sloat Boulevard. The contract was awarded to Coast Pipe Line Contractors on June 1, 1953 and completed on January 27, 1954 at a cost of $213,975.92.

Contract No. 666 - For the replacing of Crystal Springs 44-inch pipeline with 78-inch pipe to also serve as a part of the Sunset Supply Line - from Crystal Springs Dam to a point near Hillsborough Bridge. The contract was awarded to Mc Guire and Hester on March 15, 1954 at an estimated bid price of $571,144.00. The contract work was 16% completed as on June 30, 1954.

3. Miscellaneous Contracts:

Contract No. 588 - For the construction of Lake Merced Pumping Station. The contract was awarded to Rothschild, Raffin and Weirick and Pacific Bridge Company, Joint Venture, on December 10, 1951 and completed on November 13, 1953 at a cost of $1,158,172.54.

Contract No. 637 - For the reroofing of Stanford Heights Reservoir. The contract was awarded to Western Roofing Service on November 23, 1953 and completed on February 5, 1954 at a cost of $12,166.49.

Contract No. 655 - For the repavement of street and sidewalk openings made by the Department for installation or repair work during the fiscal year 1953-54. The contract was awarded to the Pacific Pavements Company, on May 25, 1953 and terminated June 30, 1954 at a cost of $121,386.17. Repavement over trenches opened by other contractors performing work for the Department, is not included under this annual paving contract, as each contractor is required to provide his own paving.

Contract No. 659 - For the repairing of wood deck, roofing and fencing of Wilde Avenue Reservoir. The contract was awarded to the Western Roofing Service on February 8, 1954 and completed on April 20, 1954 at a cost of $4,013.00

Contract No. 660 - For the construction of Summit Pump Station. The contract was awarded to C. J. Collins Company on May 3, 1954 at an estimated bid price of $31,154.00. The contract work was 10% completed as on June 30, 1954.

Contract No. 664 - For the construction of Summit Reservoir. The contract was awarded to Monson Brothers on September 21, 1953 at an estimated bid price of $576,697.00. On June 30, 1954 the work was 18% completed.

Contract No. 665 - For the installation of conveyors and elevators in the Walnut Dehydrator Building at Sunol Headquarters of the Department. The contract was awarded to R. L. Logan on August 17, 1953 and completed on October 16, 1953 at a cost of $12,832.78.

Contract No. 667 - For the gathering and delivery of walnut crop from the orchard at Sunol. The contract was awarded to John Helzer on August 31, 1953 and completed on November 23, 1953 at a cost of $7,455.41.

Contract No. 671 - For replacing trestle bents under the Niles-Irvington Pipeline. The contract was awarded to Chas. S. Moore on June 14, 1954 at an estimated bid price of $18,870.00. On June 30, 1954 the work was 3% completed.

Contract No. 673 - For the diking of Bay Division Pipeline right-of-way at Ravenswood. The contract was awarded to Associated Dredging Company on June 1, 1954 at an estimated bid price of $15,937.00. On June 30, 1954 the contract work was 2% completed.

Contract No. 678 - For the reroofing of buildings at the Department's Bryant Street Yard. The contract was awarded to Leon Carlon om March 1, 1954 and completed on April 13, 1954 at a cost of $5,042.57.

Contract No. 685 - Alterations on the first, mezzanine, second and third floors in the Department's building at 425 Mason Street, San Francisco. The contract was awarded to Wm. Mc Intosh & Son on June 1, 1954 at an estimated bid price of $5,851.00. As of June 30, 1954 no work has been started on this contract.

4. Informal Contracts:

The following work involving amounts of less than $2000 each contract, was done under a service order issued after posting a bid invitation and receiving informal bids.

Informal Bid No. I-104- For the surfacing of access roads to water treatment plants, San Mateo County. Service order was issued to the San Mateo Feed and Fuel Company on September 10; 1953 and work was completed at a cost of $1,954.50.

Informal Bid No. I-105- For installing of two floor furnaces at the Lake Honda Keeper's House at Laguna Honda Boulevard and Clarendon Avenues, San Francisco. Service order was issued to the Atlas Furnace Company and work was completed at a cost of $272.00.

Informal Bid No I-106- For sidewalk paving at Stanford Heights Reservoir, San Francisco. Service order was issued to Love and Haun and work was completed at a cost of $422.24.

Informal Bid No. I-107- For the cutting and disposing of certain trees at College Hill Reservoir. Cancelled.

Informal Bid No. I-108 - For painting at the Department's cottages, Sunol Headquarters near Sunol, Alameda County. Service order was issued to Russell Hinton and work was completed at a cost of $1,997.00.

Informal Bid No. I-109- For lighting in rooms 403, 404 and 405 in the Department's building at 425 Mason Street, San Francisco. Order for service or work was issued to M. Schimetschek and work was completed at a cost of $559.00.

Informal Bid No. I-110- For the painting of rooms 404 and 405 in the Department's building at 425 Mason Street, San Francisco. Order for service or work was issued to Fulton Painting Company and work was completed at a cost of $210.00.

AGRICULTURAL DIVISION

On July 1, 1954 the area owned in fee was 63,321.9 acres which was 14.9 acres less than shown in the annual report of June 30, 1953. This decrease is as follows:

PURCHASES:	Acres	Acres
Land for Summit Reservoir		0.605
SALES:		
Parcel 1 of San Mateo County Lands	7.487	
Part of Parcel 57 Niles Canyon Lands	1.493	
Part of Parcel 55 Lake Merced Lands	0.39	
Part of Parcel 22 San Francisco Lands	1.84	
Part of Parcel 71 Alameda County	4.30	
	15.510	0.605
NET INCREASE IN ACRES:		14,905

Kind of Lease AGRICULTURAL:	Leased Acreage	No. of Leases	Income
* Cattle and Dairy	29,718	17	$ 94,361.98
Share Crop and Cash Rental	3,190	10	20,722.00
Specialty	970	6	30,642.00
Flat Rate	1,805	30	6,392.70
Airport Agricultural Lease	528	1	7,000.00
NON-AGRICULTURAL:			
Flat Rates	145	43	12,113.46
Royalties	49	2	93,139.55
Skyline Material Rock Quarry			
Lowrie Rock Quarry			
Miscellaneous	183	6	12,746.64
Taxes Paid by Tenants	-	-	2,693.96
	36,588	115	$ 279,812.39

* includes cash rental and sliding scale cattle leases.

WALNUT ORCHARD:			
Sale of Walnuts	90	-0-	$ 47,826.07
" " " (new orchard)	40	-0-	-0-
	36,718	115	$ 327,638.46

GENERAL:

The policy of examining all leases and revaluing them which was begun on October 1, 1951, has continued with great success and with a substantial increase in revenues for this Division.

The Agricultural Division annual income at the start of this program totaled $ 207,633.00. With the close of the fiscal year June 30, 1954, the income had risen to the total of $320,638.00. This represents an increase of $ 113,005. in a period of 2½ years. Net income is $ 271,796.00 which is the highest net income in the history of the Agricultural Division.

This has been attributed principally to the renegotiation of a large number of cattle leases at a time prior to the drop in the price of beef, thereby maintaining a higher income.

A number of unprofitable share crop leases were re-negotiated on a cash basis, in many cases doubling and even tripling the previous rent and the addition of new areas heretofore unleased together with general revision of commercial leases.

The walnut orchard showed a substantial increase with a good crop and increased revenues were received from the two rock quarries and the Crystal Springs Golf Course.

The policy of transforming small leases into Revocable Permits continued and the consolidation of small adjacent leases into one larger lease also reduced the number of leases.

About half of the work involved in this Division is non-agricultural. Additional duties have been added including Public Relations work with the various communities and countries in which the Water Department and the Public Utilities Commission operate.

Airport properties totaling 572 acres are now under the supervision of this Division. Former income of $2400 per year on this property has now been boosted to about $ 6000 per year average.

Improvements were made to the Sunol walnut dehydrator and the sprinkling system for the orchard.

CATTLE LEASES:

A change has been made on several of the cattle leases whose rental is based on a sliding scale depending on the price of beef cattle. Because of the drop in prices last year and in order to stabilize the great fluctuation that occurs each year, a number of these leases were renegotiated to a higher cash rental basis.

The Walker lease formerly consisting of 4208 acres was broken up into three major leases for a cash rental.

The land ranges from poor to good for grazing purposes. A large portion, however, is steep, brushy and inaccessible. Inasmuch as its primary use is for watershed purposes, income derived thru leasing means additional revenues to the Water Department.

For many years, little was done to develop and improve these lands. In the past few years as leases expired a "new look" was instituted in the improvement of these grazing lands. Tenants were required and encouraged to qualify under County Conservation programs, which meant development of new dams, springs, controlled grazing, new roads, fences and improved land management. In many cases the Government paid part of the expenses. In all cases the improvement of the land meant higher returns to the tenant and to the City at no cost to the City.

Because of the wonderful cooperation of the City's tenants (many of them old time Portuguese going back to early California) the following results have been compiled which tell their own story:

1.	New earth dams and reservoirs constructed - (capacity ranges from 100,000 gal. to 3,200,000 gal.,average per day is 1,500,000 gal.).	17
2.	Springs developed	45
3.	New permanent troughs and cattle watering locations	39
4.	Miles of new roads	11
5.	Miles of fences repaired and built	19
6.	Miles of fire guards	10
7.	Acres under controlled grazing	5000

Most of the new roads were built into previously inaccessible areas. By piping from the new dams to the watering troughs, large areas heretofore ungrazed, were developed.

Controlled grazing means permitting range grasses to reseed themselves by means of periodically holding off grazing.

SHARE CROPS:

Because of the decline in income from hay and grain and in order to derive a higher income per farmable land acre, the policy of further reducing share crop leases to cash rentals continued.

Principal crops raised were oats, barley, wheat, alfalfa hay and barley and wheat grain.

Specialty Crops included 500 acres of roses at Pleasanton, 70 acres of pole string beans, 3 strawberry leases totaling 200 acres and a Government experimental plot of 30 acres near Sunol that has developed several new types of range grasses.

NON-AGRICULTURAL LEASES:

This category includes the Crystal Springs Golf Course which produces about $ 14,000 annually on a percentage basis, two rock quarries on a royalty basis and various commercial leases for which the land is leased for picnic grounds, lunber yards, nurseries, restaurant and other commercial types of business.

Eleven billboard leases yield $ 1,092.00 per year while many small leases have been converted to income producing revocable permits.

WALNUT ORCHARD:

The 1953 harvest totaled 80½ tons which was somehwat lower than the previous year's record of 116-1/3 tons. Crop was of high quality and production was considerably above the State average which was an unusually light crop.

Improvements in the dehydrator building by means of installing a "bulk"process handling system resulted in a reduction on the harvesting contract from $114.00 per ton to $92.00 per ton or a saving of $22.00 per ton.

Preparations are under way to harvest next year's crop by mechanical "pickers" which will lower harvesting costs by at least another $22.00 per ton.

Bulk delivery eliminates the sacking and sack handling of the crop except for the Mayettes which, because of their thin shells, must be handled in sacks.

The City holds membership in the Walnut Growers' Association at Walnut Creek where the nuts are delivered after hulling and drying is done at the City's dehydrator at Sunol.

The sprinkler system was increased to cover most of the orchard, insuring an adequate supply of moisture. One man can now handle this system eliminating costly tractor operation in preparing land for irrigation and the work of four men for ground irrigation has been eliminated.

A good cover crop of vetch, timely spraying during the winter and summer, dusting for aphid control together with a thorough job of cultivation constituted the major operations.

Sludge from the City's sewage treatment plant in San Francisco was spread over the orchard for the second year in place of the high priced fertilizer previously used. The much needed beneficial bacteria and soil conditioner effects of the sludge greatly assisted the walnut trees. This was reflected in a decided greenness of the leaves, new growth and increased production. These results were secured at a great savings in fertilizer costs.

The new forty acre walnut orchard made a decided growth and early varieties are expected to produce their first crop next harvest. The trees were permanently shaped and wooden "supports" and "arms" were installed to protect them from wind damage and other causes. Morning Glory continued as a serious pest in this orchard.

REVOCABLE PERMITS - - Over four hundred Revocable Permits are under the supervision of this Division covering right of way and other properties in four counties. Some of these permits produce a nominal revenue while most are non-commercial and relieve the Water Department of the expense of upkeep and maintenance. Income is derived from twenty-one of these permits totaling $2,000.00. The remainder are used for non-commercial and garden purposes.

PUBLIC RELATIONS - - Contract with local and county officials, particularly in the Millbrae, San Bruno, San Mateo, Niles and Pleasanton areas resulted in continued favorable relations and mutual cooperation.

CARE OF PROPERTY- - Every precaution has been taken to see that tenants and all activities on the land do not interfere with watershed operations.

Weed control, sanitary measures and rodent control, cooperation with the various Departments of Agriculture, Health Boards and the University of California in various experiments, control work and program has been beneficially carried on.

FENCES:

Considerable replacing of boundary fences has taken place in much needed areas.

As the result of a substantial saving in purchase costs of posts and pickets directly from lumber mills supplies, it was possible to make much needed progress in this direction.

A standard cattle fence consists of 220 posts, 450 pickets and 13 spools of barbed wire per mile. Posts are spaced 24 feet with 2 pickets in between with 4 wires.

MISCELLANEOUS:

The Agricultural Division became a member of the California Farm Bureau during the year. This will be of great assistance to the Division in securing proper tenants for the various types of agricultural leases.

One of the big extra-curricular activities is the Division's administration of the Airport agricultural lease which covers 578 acres of airport lands.

A check for $ 500 was received from the United States Department of Agriculture covering conservation practices performed by the Division in conformity with the County Conservation program.

Seventy acres of pole string beans raised on the Sunol irrigable lands has attracted unusual attention because of good growth and high production.

Strawberry acreage has increased along the Calaveras Road and a new name has been coined for the Sunol Valley, "Berryland". High per acre production has also attracted much attention in agricultural circles.

Hundreds of distinguished visitors have stopped by to see the Sunol walnut orchard. Visitors form twelve Eastern states, students from nearby colleges interested in production and marketing of crops and agricultural officials far and wide have acclaimed the "model" San Francisco Water Department walnut orchard.

CONCLUSION:

The work of this Division has been greatly increased. No provision in salaries is made for the non-agricultural leases which entail more time and effort because of their concentrated nature and because of their constantly increasing number.

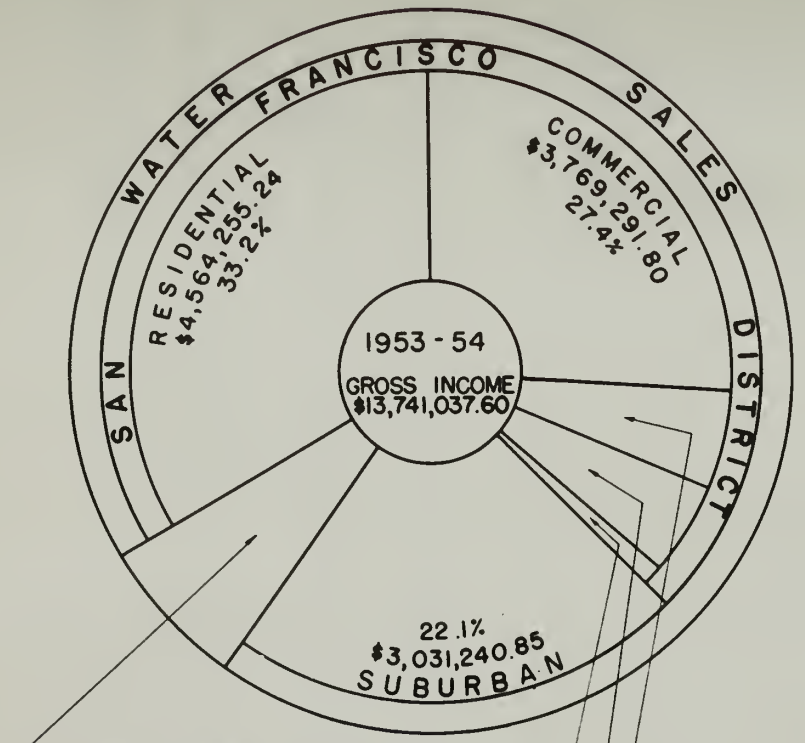
The personnel of this Division consists of the Agricultural Superintendent, his Assistant, Secretary, one working foreman, two laborers and one farmer. Additional seasonal help is sometimes required for various operations.

WALNUT CROP AND VALUE DURING CITY OWNERSHIP

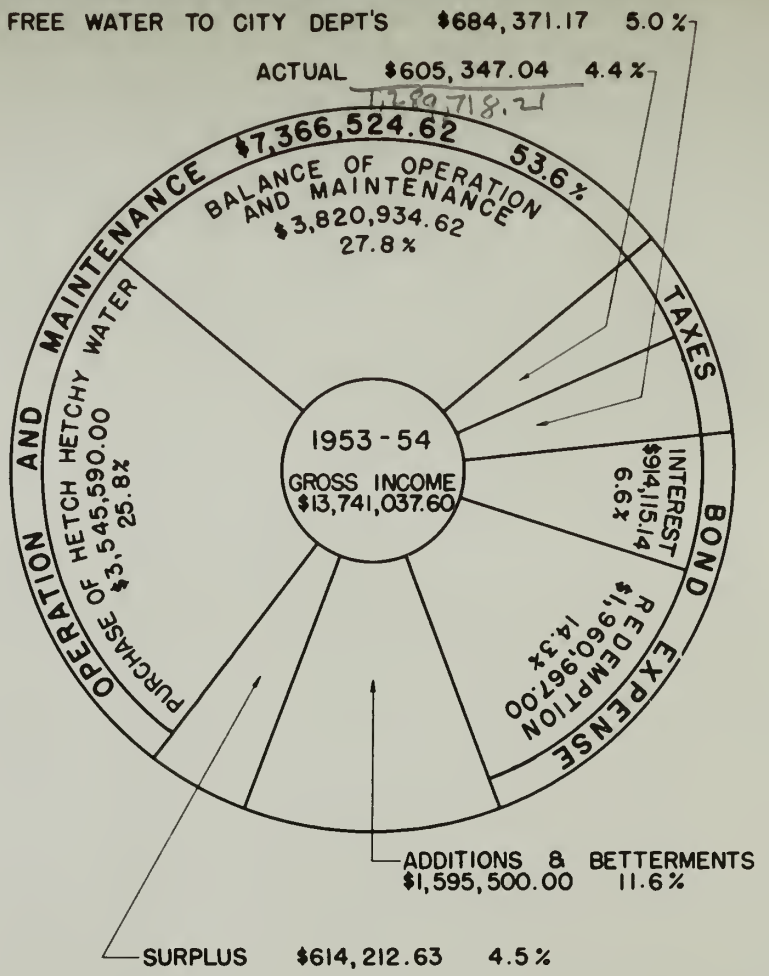
	Total Yield Pounds	Gross Value	Net Cash Received	Association Charges % of Gross *	Packing House Charges per lb.
1930	110,361.	$23,905.44	$20,024.55	16.23	$ .0138
1931	91,570.	13,778.73	12,272.73	10.93	.0091
1932	206,795.	28,994.25	20,391.18	29.67	.0070
1933	153,080.	23,635.21	17,905.45	24.24	.0073
1934	136,672.	18,039.52	13,236.00	26.63	.0059
1935	209,095.	27,359.11	22,719.87	16.96	.0045
1936	187,605.	27,865.13	24,947.57	10.47	.0046
1937	179,954.	23,808.71	21,102.05	11.37	.0042
1938	258,934.	36,812.05	31,801.16	13.61	.0090
1939	153,770.	12,747.35	11,366.74	10.83	.0124
1940	90,148.	13,570.25	11,671.08	14.00	.0100
1941	239,062.	37,182.09	29,807.07	19.83	.0088
1942	254,594.	45,744.85	44,000.73	3.81	.0068
1943	188,590.	49,552.64	48,373.84	2.38	.0082
1944	107,831.	29,487.66	26,901.72	8.77	.0138
1945	214,919.	62,893.03	58,474.64	7.03	.0126
**1946	240,883.	73,017.57	73,017.57	0	0
**1947	81,167.	16,700.11	16,700.11	0	0
**1948	196,529.	39,896.52	39,896.52	0	0
**1949	153,434.	25,546.71	25,546.71	0	0
1950	135,377.	31,879.62	26,983.69	15.36	.0361
1951	184,497.	50,394.52	41,728.69	17.19	.0470
1952	232,716.	67,279.72	50,687.67	24.66	.0713
1953	152,766.	47,826.07	36,410.41	23.87	.0747
Prior Years Adjust		3,431.54	3,431.54		
	4,160,349.	831,548.50	729,599.29		

*Includes cost of surplus control, operating reserve and revolving fund in addition to actual Assocation charges for marketing expense.

**Sold under competitive bids.



SOURCE OF INCOME
FISCAL YEAR ENDING JUNE 30, 1954



DISPOSITION OF GROSS INCOME
FISCAL YEAR ENDING JUNE 30, 1954

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained strictly in accordance with the requirements of the State Public Utilities Commission and Section 64 of the Charter, and the accounts of the Department have been so coordinated with the Controller's system that no encumbrance or expenditure against budget estimates can be incurred without prior certification from the Controller that funds are available. As provided in Ordiance 9.0621, an annual audit of the Department is made as of June 30, by a firm of certified public accountants. The accountant's report is not available at the time the Department's financial statement goes to press, hence there may be minor differences between the two reports due to reclassifications made by the accountants.

Comments on Financial Statements:

An analysis of the disposition of Earned Surplus, together with additions thereto and deductions therefrom is shown in the body of these comments.

The following financial statements and cost reports are presented:

Balance Sheet June 30, 1954 (Exhibit A).

Income Statement for the years ending June 30, 1953 and June 30, 1954 (Exhibit B).

Surplus Account June 1954 (Exhibits C and D).

Comparative Statement of Operating Expenses for fiscal year 1952-53 and 1953-54 (Exhibit E).

Operating Expenses for past four fiscal years (Schedules Nos. 1,2,3 and 4).

Additions, Betterments and Replacements for fiscal year 1953-54 (Schedule No.5).

Agricultural Division, Receipts and Expenses for past five years (Schedule No.6).

Operating Expenses, City Distribution Division for fiscal year 1953-54 (Schedule Nos. 11 and 12).

Operating Expenses, outside of San Francisco for fiscal year 1953-54 (Schedules Nos. 13 and 14).

Sale of water for the fiscal year 1953-54 was $12,817,944.81 as against $12,504,882.93 for prior year, an increase of $313,061.88 or 0.86% in San Francisco consumption area and 8.076 outside of San Francisco.

Other income amounts to $923,092.79 as against $382,029.88 for prior year, an increase of $541,062.91. Profit from sale of land accounted for this increase.

Operating Expenses show a net increase of $494,943.38 as shown by the following tabulation:

	Increase	Decrease
Source of Supply	$ 31,296.67	$
Pumping Expenses	18,384.42	
Purification Expenses	2,403.01	
Transmission and Distribution Expenses	141,364.77	
Commercial Div'n Expenses	34,466.29	
Administrative & General	129,787.02	
Taxes Actual	52,661.44	
Provision for Doubtful Accounts	1,777.96	
Provision for Depreciation	107,191.61	
Municipal Taxes, Comparison*		16,193.93
Revision for Contingent Refunds		8,195.88
Net Increase		494,943 38
	$ 519,333.19	$ 519,333.19

*Water delivered to Municipal Departments offset by taxes.

#494,943.38 Incr.
313,061.88 Decr.
181,881.50 net incr.
107,191.61 Depr.
#84,689.89 net incr. Op. Exp.

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT
DISPOSITION OF SURPLUS

SURPLUS	TO JUNE 30, 1953	YEAR 1953-1954	TO JUNE 30, 1954
CONTRIBUTED TO:			
GENERAL FUND	$15,992,457.24	$	$15,992,457.24
HETCH HETCHY PROJECT	4,510,127.21		4,510,127.21
HETCH HETCHY POWER	1,228.59		1,228.59
APPROPRIATED FOR:			
BOND REDEMPTION - SPRING VALLEY	23,000,000.00	1,000,000.00	24,000,000.00
" " - 1933 WATER DISTRIBUTION	9,281,594.33	563,000.00	9,844,594.33
1947 HETCH HETCHY BOND INTEREST & REDEMPTION	1,645,209.28	434,878.17	2,080,087.45
ADDITIONS AND BETTERMENTS	19,570,915.79	1,595,500.00	21,166,415.79
ADDITIONS & BETTERMENTS, LAKE MERCED PROJECT	1,250,000.00		1,250,000.00
PURCHASE OF LAND	54,858.50		54,858.50
OTHER PURCHASES	100,429.29		100,429.29
FROM SURPLUS	-1,532,776.81	-747,949.08	-2,280,725.89
	$73,874,043.42	$2,845,429.09	$ 76,719,472.51
ADD:			
INITIAL EXCESS EARNINGS- SPRING VALLEY WATER CO.	$ 4,152,652.24	$	$ 4,152,652.24
VALUATION MUNICIPAL WATER WORKS	100,000.00		100,000.00
GRANTS EARNED ON FEDERAL PROJECTS	2,358,987.60		2,358,987.60
SURPLUS MATERIAL AND EQUIPMENT	373,041.59		373,041.59
LAND SALES - PROFIT	603,576.22	548,535.13	1,152,111.35
BOND PREMIUM	840,660.86		840,660.86
PALO ALTO PIPE LINE	360,271.90		360,271.90
MISCELLANEOUS ADDITIONS	396,034.62	1,992.80	398,027.42
BAY BRIDGE PUMP AND SUPPLY LINE	219,601.79		219,601.79
1947 HETCH HETCHY BOND FUND STRUCTURES	10,699,494.19	1,934,987.76	12,634,481.95
REVALUATION OF WATER DEPARTMENT PROPERTIES	577,659.70	188,291.42	765,951.12
	$20,681,980.71	$2,673,807.11	$ 23,355,787.82
DEDUCT:			
CONTRIBUTION BY HETCH HETCHY FOR SUTRO RESV'R	$ 409,471.41	$	$ 409,471.41
CONTRIBUTION TO GENERAL FUND	15,992,457.24		15,992,457.24
DEFICIT COUNTY LINE WATER WORKS	19,189.15		19,189.15
PAYMENT FOR PURPOSE OF ENABLING CITY TO TAKE OVER PROPERTIES IN ADVANCE	745,274.31		745,274.31
LANDS CONTRIBUTED TO CITY	172,564.67		172,564.67
CONTRIBUTION TO HETCH HETCHY WATER SUPPLY	4,430,005.85		4,430,005.85
MISCELLANEOUS DEDUCTIONS FROM SURPLUS	275,549.70		275,549.70
DEPRECIATION DUE TO REVALUATION	9,059,955.03		9,059,955.03
DEPRECIATION NOT FUNDED (ACCRUED 3-3-30)	12,499,358.78	481,805.67	12,981,164.45
	$ 43,603,826.14	$ 481,805.67	$ 44,085,631.81
	$ 50,952,197.99	$5,037,430.53	$ 55,989,628.52

EXHIBIT A

SAN FRANCISCO WATER DEPARTMENT

BALANCE SHEET

JUNE 30, 1954

ASSETS

FIXED CAPITAL:		
IN SERVICE	96,850,710.21	
NOT IN SERVICE	722,437.00	
	97,573,147.21	
LESS PROV'N FOR DEPRECIATION	31,808,808.05	
	65,764,339.16	
CONSTRUCTION WORK IN PROGRESS	704,239.92	66,468,579.08
CASH:		
TREASURER'S BALANCE, SCHED.ANNEX.	6,070,464.67	
REVOLVING FUND	30,000.00	
OTHER CASH		6,100,464.67
ACCOUNTS RECEIVABLE:		
CONSUMERS' ACCOUNTS	1,093,418.58	
LESS RESERVE FOR LOSSES	107,138.47	
	986,280.11	
OTHER ACCOUNTS RECEIVABLE:		
REVENUE	27,113.70	
NON-REVENUE	58,610.23	1,072,004.04
INTERFUND ACCOUNTS:		
PUBLIC SERVICE ENTERPRISES	328,986.36	
GENERAL CITY AND COUNTY	1,677.55	330,663.91
DEFERRED CHARGES:		
OPERATING FUND EXPENDITURES UNBILLED	68,815.74	
PREPAID TAXES	-	
HETCH HETCHY PROJECT	-	
DEPOSIT FOR ORDERS OF POSSESSION	33,467.50	
MATERIALS AND SUPPLIES	456,226.60	
MISC. JOBBING & SALES ACCT. etc.	22,324.79	
PUBLIC UTILITIES COMMISSION		580,834.63
TOTAL ASSETS		$ 74,552,546.33

LIABILITIES

BONDED DEBT:		
SPRING VALLEY WATER BONDS, 1928	17,000,000.00	
MATURED, NOT PRESENTED FOR PAYMENT:		
SPRING VALLEY 1928	29,000.00	
WATER DISTRIBUTION 1933	1,000.00	17,030,000.00
BOND INTEREST PAYABLE:		
ACCRUED NOT DUE:		
SPRING VALLEY WATER BONDS, 1928	382,500.00	
MATURED, NOT PRESENTED FOR PAYMENT:		
SPRING VALLEY, 1928	12,510.00	
WATER DISTRIBUTION, 1933	20.00	395,030.00
ACCOUNTS PAYABLE:		
WARRANTS OUTSTANDING, SCHEDULE ANNEXED	310,368.13	
CONSUMERS' DEPOSITS & ADVANCES	190,891.99	
GENERAL CREDITORS	98,257.36	
ACCRUED PAYROLL	-	
PAYROLL DEDUCTIONS PAYABLE	34,258.30	633,775.78
INTERFUND ACCOUNTS:		
SCHEDULE ANNEXED		
PUBLIC SERVICE ENTERPRISES	102,049.15	
GENERAL CITY AND COUNTY	41,714.39	143,763.54
DEFERRED CREDITS:		
RESERVE FOR CONTINGENCY REFUNDS- FUNDED	97,665.00	
RESERVE FOR CONTINGENCY REFUNDS- UNFUNDED	18,234.18	
RESERVE FOR COMPENSATION INSURANCE	117,620.49	
OTHER DEFERRED CREDITS	126,828.82	360,348.49
SURPLUS, SCHEDULE ANNEXED		55,989,628.52
TOTAL LIABILITIES		$ 74,552,546.33

THE CONTROLLER CARRIES AN ACCOUNTS RECEIVABLE FROM GOVERNMENTAL BODIES (ACCOUNT 2171) IN THE SUM OF $112,839.52 NOT REFLECTED IN THIS BALANCE SHEET

EXHIBIT B

SAN FRANCISCO WATER DEPARTMENT

INCOME ACCOUNT

TWELVE MONTHS ENDING JUNE 30, 1954 AND 1953

	TWELVE MONTHS ENDING JUNE 30 1954	TWELVE MONTHS ENDING JUNE 30 1953	INCREASE OR DECREASE	CUMULATION FROM MARCH 3, 1930 TO JUNE 30, 1954
SALE OF WATER:				
SAN FRANCISCO	$9,042,320.08	$8,946,222.87	$ 96,097.21	$174,154,790.31
OUTSIDE OF SAN FRANCISCO	3,031,240.85	2,801,840.45	229,400.40	24,437,771.22
MUNICIPAL DEPARTMENTS- ACTUAL	60,012.71	56,254.51	3,758.20	1,419,096.28
MUNICIPAL DEPARTMENTS- COMPARISON*	684,371.17	700,565.10	16,193.93	11,987,043.60
	12,817,944.81	12,504,882.93	313,061.88	211,998,701.41
OTHER EXPENSES:				
SOURCE OF WATER SUPPLY	393,601.44	362,304.77	31,296.67	6,620,375.29
STANDBY CHARGE & PURCHASE OF WATER	3,545,590.00	3,545,590.00	-	32,826,061.92
PUMPING	379,634.23	361,249.81	18,384.42	6,658,806.09
PURIFICATION	144,533.56	142,130.55	2,403.01	1,812,327.01
TRANSMISSION & DISTRIBUTION	965,134.13	823,769.36	141,364.77	10,607,740.19
COMMERCIAL DIVISION	596,343.89	561,877.60	34,466.29	10,253,362.27
ADMINISTRATION & GENERAL	626,186.97	496,399.95	129,787.02	8,399,619.60
TAXES - ACTUAL	605,347.04	552,685.60	52,661.44	7,928,976.91
PROVISION FOR DOUBTFUL ACCOUNTS	5,647.59	3,869.63	1,777.96	250,491.79
PROVISION FOR DEPRECIATION	1,077,970.37	970,778.76	107,191.61	24,888,634.90
MUNICIPAL TAXES- COMPARISON *	684,371.17	700,565.10	16,193.93	12,003,282.32
RESERVE FOR REFUNDS	53,630.08	61,825.96	8,195.88	115,456.04
	9,077,990.47	8,583,047.09	494,943.38	122,365,134.33
PROFIT FROM OPERATIONS:	3,739,954.34	3,921,835.84	181,881.50	89,633,567.08
OTHER INCOME:				
RENTALS, INCL. CROP SHARES	280,749.79	272,088.24	8,661.55	2,494,948.04
INTEREST EARNED	18,750.04	16,851.77	1,898.27	497,431.19
SALE OF WALNUTS	47,826.07	67,279.72	19,453.65	831,348.40
MISCELLANEOUS	575,766.89	25,810.15	549,956.74	833,952.56
	923,092.79	382,029.88	541,062.91	4,657,680.19
OTHER EXPENSES:				
BOND INTEREST	914,115.14	986,082.54	71,967.40	36,509,913.49
AGRICULTURAL DIVISION	19,299.96	17,072.29	2,227.67	392,452.06
WALNUT ORCHARD EXPENSE	29,541.89	48,883.47	19,341.58	545,519.77
MISCELLANEOUS	11,216.18	7,239.18	3,977.00	93,941.16
	974,173.17	1,059,277.48	85,104.31	37,541,826.48
NET INCOME	3,688,873.96	3,244,588.24	444,285.72	56,749,420.79

605,347.04
684,371.17
1,289,718.21

* WATER SERVICE TO MUNICIPAL DEPARTMENTS OFFSET BY MUNICIPAL TAXES

EXHIBIT C

SAN FRANCISCO WATER DEPARTMENT

SURPLUS ACCOUNT

FOR TWELVE MONTHS ENDING JUNE 30, 1954

SURPLUS, JUNE 30, 1953	$50,952,197.99	
ADD:		
NET INCOME FOR TWELVE MONTHS ENDING JUNE 30, 1954	3,688,873.96	
PROPERTIES IN SERVICE FROM PROCEEDS OF 1947 HETCH HETCHY BOND FUND	1,934,987.76	
CONTRIBUTION OF COST OF INSTALLING MAIN	36,738.40	$56,612,798.11
DEDUCT:		
ADJUSTMENTS ARISING FROM PLANT APPRAISALS JUNE 30, 1953	$ 188,291.42	
CONTRIBUTION TO 1947 H. H. WATER BOND FUND	434,878.17	623,169.59
SURPLUS - JUNE 30, 1954		$55,989,628.52

EXHIBIT D

SAN FRANCISCO WATER DEPARTMENT

COMPOSITION OF SURPLUS - CONDENSED

JUNE 30, 1954

INITIAL SURPLUS - MARCH 3, 1930			
AMORTIZATION ON CONTRIBUTION (SPRING VALLEY)		$ 4,152,652.24	
VALUATION OF MUNICIPAL WATER WORKS		100,000.00	
		$ 4,252,652.24	
LESS: ADD'L ALLOWANCE FOR DEPRECIATION MARCH 1, 1920 TO MARCH 3, 1930		2,327,916.67	$ 1,924,735.57
ADDITIONS:			
NET PROFIT, MARCH 3, 1930 TO JUNE 30, 1954		$56,749,420.79	
MISCELLANEOUS AND YEAR TO YEAR ADJUSTMENTS		5,178,067.22	
CONTRIBUTION FROM HETCH HETCHY POWER DIVISION		409,471.41	
BAY DIVISION PIPE LINE NO. 3 AND SUNSET SUPPLY LINE IN SERVICE (PAID FROM PROCEEDS OF 1947 H. H. WATER BONDS)		12,634,481.95	74,971,441.37
GRANTS EARNED ON FEDERAL PUBLIC WORKS PROJECT			2,358,987.60
YEAR TO YEAR - ADDITIONS TO SURPLUS - JUNE 30, 1953			1,504,481.49 $80,759,646.03
DEDUCTIONS:			
CONTRIBUTED TO GENERAL FUND			$15,992,457.24
CONTRIBUTED TO 1947 H. H. WATER BOND FUND		$ 2,080,087.45	
CONTRIBUTED TO H. H. WATER SUPPLY		4,430,005.85	6,510,093.30
LANDS CONTRIBUTED: TO CITY AND COUNTY OF SAN FRANCISCO FOR STREETS AND BOULEVARDS			172,564.67
EXCESS OF ADJUSTED BOOK VALUE OF PLANT APPRAISAL DEC. 31, 1937	$1,990,474.91		
EXCESS OF ADJUSTED BOOK VALUE OF PLANT APPRAISAL JUNE 30, 1953	188,291.42	$ 2,178,766.33	
LESS: ADJUSTED BOOK VALUE ON PLANT APPRAISAL JUNE 30, 1948		83,864.03	2,094,902.30 24,770,017.51
SURPLUS - JUNE 30, 1954			$55,989,628.52

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

EXHIBIT E

COMPARATIVE STATEMENT OF OPERATING EXPENSES
FOR THE FISCAL YEARS ENDED JUNE 30, 1954 AND JUNE 30, 1953

	FISCAL YEAR ENDED JUNE 30	
	1953	1954
SOURCE OF WATER SUPPLY EXPENSES:		
Superintendence	52,030.99	$ 56,857.31
Operating Labor	72,273.47	76,267.18
Operating Supplies and Expen[illegible]	19,276.07	18,271.51
Repairs & Maintenance - Buildi[illegible]s, Fixtures and Grounds	155,726.04	178,604.35
-Repairs - Surface Facilities	62,998.20	63,601.09
	362,304.77	$ 393,601.44
PUMPING EXPENSES:		
Labor - Pumping	$ 87,192.32	$ 99,632.36
Fuel for Steam	65,823.57	67,418.97
Power Purchased	190,300.24	189,534.84
Lubricants	44.69	16.22
Miscellaneous Supplies and Expenses	2,924.11	2,159.82
Repairs - Primary Pumping Equipment	6,321.71	12,136.54
Repairs - Boilers and Equipment	331.18	393.34
Repairs - Miscellaneous Equipment	1,643.20	2,102.09
Repairs - Building Fixtures and Grounds	6,168.79	6,240.05
	$ 361,249.81	$ 379,634.23
PURIFICATION EXPENSES:		
Superintendence and Labor	$ 51,042.55	$ 51,844.07
Supplies and Expense	89,734.50	91,349.59
Repairs - Plant, Structures and Equipment	1,353.50	1,339.90
	$ 142,130.55	$ 144,533.56
TRANSMISSION AND DISTRIBUTION EXPENSES:		
Superintendence	$ 77,210.65	$ 96,359.09
Patrolling Storage Facilities	24,097.48	26,007.06
Meters and Fittings Department	117,929.05	181,415.97
Street Department	29,559.11	34,936.93
Consumers' Premises Expenses	55,332.34	59,541.01
Miscellaneous Supplies and Expenses	18,442.05	28,775.88
Repairs - Transmission Mains and Canals	54,760.53	53,746.97
Repairs - Reservoirs, Tanks and Standpipes	12,325.86	29,973.25
Repairs - Distribution Mains and Canals	170,434.57	175,454.48
Repairs - Service Connections	166,640.42	172,827.04
Repairs - Distribution Buildings and Grounds	37,738.28	49,491.47
Repairs - Distribution Equipment	14,544.10	10,261.85
Reconstruct and Relocate Pipe Lines and Services	44,754.92	46,382.53
	$ 823,769.36	$ 965,134.13

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

EXHIBIT "E"

- Continued -

	FISCAL YEAR ENDED JUNE 30	
	1953	1954
COMMERCIAL EXPENSES:		
COLLECTIONS	$ 143,109.76	$ 148,359.87
READING METERS	72,096.41	75,579.21
BOOKKEEPING DEPARTMENT	186,351.40	198,343.60
GENERAL	69,614.86	76,492.26
INSPECTION AND SERVICE	65,592.66	71,919.30
SHIPPING	25,112.51	25,649.65
	$ 561,877.60	$ 596,343.89
ADMINISTRATIVE AND GENERAL EXPENSE:		
SALARIES - GENERAL OFFICERS	$ 21,890.53	$ 23,791.00
SALARIES - GENERAL OFFICE CLERKS	69,127.99	76,244.01
MISCELLANEOUS SUPPLIES AND EXPENSES	4,026.02	2,613.20
INJURIES AND DAMAGES	8,769.25	8,498.05
RETIREMENT SYSTEM CONTRIBUTIONS	138,790.10	214,721.32
MASON STREET BUILDING EXPENSE	40,591.36	41,771.71
TELEPHONE SERVICE	31,555.73	35,109.63
GUEST COTTAGES AND REST ROOM	195.60	85.16
GENERAL ENGINEERING	69,521.16	88,753.09
HYDROGRAPHY	549.78	849.82
MISCELLANEOUS	2,506.94	-21,775.66
COMPENSATION INSURANCE	13,022.82	21,239.63
OTHER INSURANCE	12,908.54	13,911.57
REPAIRS - MASON STREET BUILDING	1,997.74	2,827.58
REPAIRS - TELEPHONE SYSTEM	12,196.95	35,219.63
PROFESSIONAL SERVICES	15,216.01	25,370.59
PUBLIC UTILITY COMMISSION EXPENSE	48,533.43	56,956.64
PROPERTY TAXES (OUTSIDE OF SAN FRANCISCO)	552,685.60	605,347.04
	$1,049,085.55	$1,231,534.01

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

OPERATING EXPENSES
SCHEDULE NO.1

RESERVOIRS AND SOURCES:	1950-1951	1951-1952	1952-1953	1953-1954
INSIDE OF SAN FRANCISCO:				
Lake Merced	$ 4,514.79	$ 5,245.47	$ 6,041.64	$ 14,370.48
OUTSIDE OF SAN FRANCISCO:				
SURFACE SOURCES:				
San Andres Reservoir	22,021.06	20,368.61	20,681.44	24,367.47
Crystal Springs Reservoir	51,518.03	61,196.13	65,212.60	74,190.08
Pilarcitos Reservoir	26,852.88	33,115.06	31,462.30	37,114.28
Calaveras Reservoir	10,752.20	14,671.47	14,740.21	21,997.29
	$111,144.17	$129,341.27	$132,096.55	$ 157,669.12
GROUND SOURCES:				
Sunol Filter Beds	$ 11,227.50	$ 13,819.48	$ 10,692.37	$ 16,426.83
Pleasanton Wells	2,135.64	2,823.74	3,109.82	1,221.71
	$ 13,363.14	$ 16,643.22	$ 13,802.69	$ 17,648.54
SUPPLY LINES AND AQUEDUCTS:				
Bay Division Pipe Lines	$ 67,087.80	$ 34,315.38	$ 57,161.61	$ 53,057.42
Stone Dam Aqueduct	3,515.32	7,478.39	4,124.84	6,841.02
Niles-Irvington Pipe Line	5,314.61	938.43	2,845.89	1,671.70
Other Supply Lines and Aqueducts	6,636.24	10,101.48	18,250.88	7,625.14
	$ 82,553.97	$ 52,833.68	$ 82,383.22	$ 69,195.28
Alameda System - General Expenses	$ 27,139.79	$ 31,137.29	$ 28,785.54	$ 34,980.70
Peninsula System - General Expenses	78,150.64	92,285.12	99,195.13	99,737.32
	$105,290.43	$123,422.41	$127,980.67	$ 134,718.02
TOTAL SOURCE OF SUPPLY EXPENSE	$316,866.50	$327,486.05	$362,304.77	$ 393,601.44

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

SCHEDULE NO. 2
OPERATING EXPENSES

PUMP STATIONS	1949-1950	1950-1951	1951-1952	1953-1954
INSIDE OF SAN FRANCISCO:				
STEAM PLANTS:				
Central	$ 96,356.15	$101,996.48	$117,797.92	$147,366.25
City	108.40	12.22	30.22	-
Clarendon Hts.	475.14	489.73	407.96	565.83
	$ 96,939.69	$102,498.43	$118,236.10	$147,932.08
ELECTRIC PUMPS:				
Lake Merced				43.26
Mount Davidson				1,051.44
Francisco Street	3,853.60	3,266.69	2,574.85	3,050.19
Alemany	40,953.82	33,721.36	28,099.00	44,072.46
Bay Bridge Pump - Treasure Is.	4,968.93	6,982.70	9,026.82	8,413.82
Forest Hill	7,717.28	8,097.61	8,451.80	9,477.37
Potrero Hts.	1,584.22	475.62	627.00	504.64
Newcomb Avenue	6,354.40	5,801.33	6,008.46	4,498.89
Fairview	543.09	650.02	467.57	532.32
Lincoln Park	840.25	728.46	839.49	841.95
Palo Alto	422.54	272.82	328.97	465.53
Twin Peaks	628.05	1,104.28	1,608.22	927.82
Lake Honda Booster	423.55	287.10	288.98	259.88
Sunset Booster	498.64	453.04	434.48	400.30
Sunset Source	1.92	1.60	2.00	1.08
Olmstead and University	1,191.73	915.24	965.63	765.10
Bernal Hts.	435.97	428.00	361.04	484.46
General	858.29	813.27	1,058.86	1,014.98
	$71,276.28	$ 64,199.82	$ 61,143.17	$ 76,805.49
TOTAL INSIDE OF SAN FRANCISCO	$168,215.97	$166,698.25	$179,379.27	$224,737.57
OUTSIDE OF SAN FRANCISCO:				
Baden	$ 1,841.01	$ 1,697.06	$ 1,058.67	$ 1,797.78
Crystal Springs Pump	118,470.95	109,663.69	107,948.79	137,774.31
Bay Division Pump	828.76	268.41	302.21	480.89
Pleasanton Pump	3,858.36	3,388.84	3,667.61	1,468.10
Pleasanton Township Water District	723.70	514.24	1,138.73	2,491.49
Irvington Pump	28,305.17	23,392.82	23,017.95	10,884.09
	$138,925.06	$137,133.96	$163,939.02	$ 154,896.66
	$305,623.31	$316,513.23	$361,249.81	$ 379,634.23

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

SCHEDULE NO. 3
OPERATING EXPENSES

PURIFICATION EXPENSES	1950-1951	1951-1952	1952-1953	1953-1954
INSIDE OF SAN FRANCISCO:				
Alemany Fluoridation	$	$	$ 2,699.82	$ 2,412.21
Francisco Street	130.27	47.97	53.75	66.05
College Hill	1,238.60	1,044.67	653.04	664.21
Lake Honda	337.06	107.64	33.67	9.85
Lombard Street	143.65	125.93	69.64	42.96
Sunset	308.53	433.69	759.15	451.84
University Mound	1,241.81	1,264.92	2,187.75	2,056.55
Sutro			107.36	72.04
TOTAL INSIDE OF SAN FRANCISCO	$ 3,399.92	$ 3,024.82	$ 6,564.18	$ 5,775.71
OUTSIDE OF SAN FRANCISCO:				
Lake Merced				$ 233.35
North San Andres Fluoridation Plant			$ 8,829.86	14,466.76
Rock River Lime Plant	$ 6,953.64	$ 11,639.06	11,306.54	15,282.44
San Andres Reservoir	9,071.75	9,087.76	13,219.28	7,972.84
Crystal Springs Reservoir	14,818.12	15,829.62	11,419.94	8,161.94
Calaveras Reservoir	11,065.57	15,520.43	16,427.41	7,783.58
Sunol Purification System	1,566.33	2,091.86	1,041.63	453.76
Other Outside Stations	1,176.86	1,974.04	2,663.58	2,959.46
Coast Range Division, H.H.W.S.	24,242.16	19,685.85	18,702.03	25,854.22
Millbrae Laboratory	40,085.16	46,112.10	51,956.10	55,589.50
TOTAL OUTSIDE OF SAN FRANCISCO	$ 108,979.59	$ 121,940.72	$ 135,566.37	$ 138,757.85
TOTAL PURIFICATION EXPENSES	$ 112,379.51	$ 124,965.54	$ 142,130.55	$ 144,533.56

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

SCHEDULE NO. 4
OPERATING EXPENSES

TRANSMISSION AND DISTRIBUTION	1950-1951	1951-1952	1952-1953	1953-1954
INSIDE OF SAN FRANCISCO:				
City Transmission Lines	$ 4,295.46	$ 3,941.10	$ 7,416.08	$ 10,681.12
Reconstruct and Relocate Pipe Lines	11,719.33	22,706.19	44,754.92	46,382.53
City Distribution Reservoirs	45,971.50	54,591.94	61,288.64	91,376.93
Meter Expenses	123,622.07	107,952.22	98,561.61	163,556.72
Street Department Expenses	24,453.55	28,444.51	29,559.11	34,886.93
Main Repairs	132,951.50	139,250.34	170,413.58	175,403.46
Service Connection Repairs	121,511.69	152,066.44	166,578.39	172,827.04
Repairs to Buildings and Equipment	3,430.02	9,017.97	14,544.10	10,261.85
Operation of Corporation Yard	8,553.97	18,836.93	16,434.39	26,924.56
Consumers' Premises Expenses	47,116.09	51,295.17	55,332.34	59,541.61
Superintendence	64,024.92	73,145.51	77,210.65	96,369.09
TOTAL INSIDE SAN FRANCISCO	$ 587,650.10	$ 671,248.32	$ 742,093.81	$ 888,211.85
OUTSIDE OF SAN FRANCISCO:				
Alameda Supply Line - Alameda Division	$ 270.07	$ 512.47	$ 712.54	$ 868.44
Alameda Supply Line - Peninsula Division	0.	0.	0.	0.
Alameda Transmission Line	4,367.01	3,611.23	6,041.02	4,152.70
Sunset Transmission Line	1,670.15	1,129.08	4,707.93	3,296.80
Crystal Springs Pump Aqueduct	11,268.50	10,882.74	11,866.86	13,989.72
New Crystal Springs Transmission Line	942.19	2,024.23	3,355.60	7,150.72
Old Crystal Springs Transmission Line	4,189.49	22,889.84	12,061.09	9,482.43
San Andres Transmission Line #1 to College Hill	5,872.18	2,560.17	5,796.67	5,249.52
San Andres Transmission Line #2 to Lake Honda	2,740.44	3,454.87	3,947.78	5,160.57
San Andres Transmission Line #3 to Merced Manor	1,589.85	4,428.35	8,462.31	3,191.51
Palo Alto Pipe Line	131.20	4.65	357.19	283.30
Niles Regulating Reservoir	3,081.96	4,511.48	4,896.95	6,080.15
Pleasanton Transmission Line	260.68	34.50	19.15	6.15
Meter Expense, Peninsula Division	16,225.02	21,118.19	19,260.26	17,776.34
Meter Expense, Alameda Division	354.17	399.50	190.20	132.93
TOTAL OUTSIDE OF SAN FRANCISCO	$ 52,962.91	$ 77,561.30	$ 81,675.55	$ 76,922.28
TOTAL TRANSMISSION AND DISTRIBUTION EXPENSES	$ 640,613.01	$ 748,809.62	$ 823,769.36	$ 965,134.13

SCHEDULE NO. 5

SAN FRANCISCO WATER DEPARTMENT
ADDITIONS, BETTERMENTS AND REPLACEMENTS
JUNE 30, 1954

A/C No.	Cont. No.	Name	Retirement	Additions	Engineering Office	Engineering Field	Force Account	Contracts	Materials and Supplies	Contractual Services	Equipment	Miscellaneous
1015		PURCHASE OF LAND		35,086.93						3,610.19		31,476.74 A
		Sale of Land	28,152.14									
1020		BUILDINGS, STRUCTURES & GROUNDS										
		Improve Lawton St.		8,979.06			8,979.06					
		Other Structures	200.00	3,391.85			3,391.85					
		Total Buildings & Structures	$ 200.00	$12,370.91			$12,370.91					
1025		SOURCE OF WATER SUPPLY										
	610	Alameda Creek Syphon	$	$525,465.71	$19,701.56	18,905.71		373,585.41	92,867.05			$ 15,405.98 B
		Bay Div. P/L #3 Monuments		63,228.37		61,374.60						1,853.77 B
		Total Source of Water Supply		$588,694.08	$19,701.56	80,280.31		$ 373,585.41	$92,867.05			$ 17,259.75
1030		PUMP STATIONS										
	538	Lake Merced Pump Station		$1,260,554.63	104,322.61	31,992.29		$1,124,239.73				
	607A&B	Mt. Davidson Pump Station		45,792.97	2,363.84	1,250.50		27,966.47	9,151.02	47.50	5,013.64	
		Sutro		1,232.29							1,232.29	
		Total Pump Sta. Equipment		$1,307,579.89	106,686.45	33,242.79		$1,152,206.20	$ 9,151.02	$ 47.50	$ 6,245.93	
1035		PURIFICATION CAPITAL										
		Chlorination Unit-Calaveras		$ 2,822.20	$	$		$	$	$	$ 2,822.20	$
		Replace Chlorine Solution Lines		1,535.19					1,535.19			
		Total Purification Capital		$ 4,357.39					$ 1,535.19		$ 2,822.20	
1040		TRANSMISSION & DISTRIBUTION										
		Cast Iron Mains under $2000		$ 41,990.69			$26,836.61	$	$15,154.08		$	
		Cast Iron Mains over $2000	$28,207.15	347,793.89	691.39	6,712.87	18,273.85	164,749.18	157,366.60			
		Inst. Services in S. F.		108,333.49			81,230.12		27,103.37			
		Furnish & Inst.Meters- S.F.		77,381.75			14,364.92		63,016.83			
		Cut in Gate Valves		72,919.17			45,444.69		27,474.48			
		Renew Services & Abandon Old	28,506.90	43,483.18			42,139.80		1,343.38			
		Relocate & Realign Water Mains		26,310.17			24,231.88		2,078.29			
		Relocate & Realign Water Serv.		38,110.41			29,496.44		8,613.97			
		Cut in Sutro Resvr Distr.Mains		7,352.26			2,425.95		4,926.31			
	641	30" Steel Main,Columbus to Bay		148,516.89	275.29	6,840.00	3,465.00	126,122.01	11,814.59			
	653	36" " " Lake Merced-Sloat		213,975.92		343.26	3,019.13	209,476.39	1,137.14			
	604	Alterations to Central Pumps		35,499.09	11,104.08	855.14		18,062.70	3,071.31		2,405.86	
		Distrib. Mains outside City		1,014.80							1,014.80	
		Install Services outside S.F.		28,327.90			9,817.24		18,510.66			
		Furnish Meters outside S. F.		15,424.86					15,424.86			
	578	Sunset S.L.Burlingame to Millbrae		1,153,109.15	61,920.10	118,902.63	18.55	958,783.55	921.09			12,563.23 B
	647	Sunset S.L.Millbrae to Baden		955,023.17	25,384.75	35,443.02	4,133.00	855,436.95	816.53		6,900.54	26,908.38 B
		Total Transm. & Distrib.	$56,714.05	$3,314,566.79	$99,375.61	169,096.92	304,897.18	2,332,630.78	358,773.49		$ 10,321.20	$ 39,471.61
1045		General Equipment	$ 122.18	$ 19,197.89							$ 19,197.89	
1046		Automotive Equipment	26,665.46	25,614.52							25,614.52	
1048		Non Operative Property		20,896.18							20,896.18	
			$111,853.83	$5,328,364.58	$225,763.62	282,620.02	$317,268.09	$3,863,422.39	$462,326.75	$ 3,657.69	$ 85,097.92	$ 88,280.10

A - Land Purchased
B - Interest during Construction

EJW:DS
10/20/54

SAN FRANCISCO WATER DEPARTMENT

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

SCHEDULE NO. 6

AGRICULTURAL DIVISION
RECEIPTS AND EXPENSES

	1949-1950	1950-1951	1951-1952	1952-1953	1953-1954
RECEIPTS, AGRICULTURAL:					
Rentals - Cattle Leases	$ 71,181.69	$ 87,426.32	$100,610.92	$108,989.53	$ 94,361.98
Rentals - Flat Rates	14,542.75	31,766.66	27,508.24	11,835.78	6,392.70
Rentals - Share Crops	23,384.95	12,191.19	16,610.19	23,106.39	20,722.00
" - Specialty				22,919.00	30,642.00
RECEIPTS, NON-AGRICULTURAL:					
Rentals - Flat Rates	9,578.31	11,071.28	13,216.47	17,670.81	12,113.46
Taxes Paid by Tenants	-0-	-0-	1,745.57	3,187.08	2,693.96
Royalties	11,920.68	21,802.94	30,537.51	60,549.48	93,139.55
Sales of Walnuts	25,546.71	31,879.62	50,394.52	67,279.72	47,826.07
Miscellaneous	9,392.53	7,237.64	14,350.10	15,777.67	12,746.64
TOTAL GROSS INCOME	$165,547.62	$203,375.65	$254,973.52	$ 331,315.46	$ 320,638.36
EXPENSES:					
Administrative and Superintendence	$ 16,365.83	$ 15,644.10	$ 14,617.17	$ 12,698.91	$ 9,926.23
Miscel. Office Supplies and Expenses	96.36	535.70	738.28	628.50	1,047.60
Automotive Service	1,080.66	1,433.64	1,773.98	1,933.12	1,645.87
Share Crops:					
Storage Insurance, Handling Freight	474.70	246.03	316.03	135.29	351.00
Care of Properties:					
Repairs- Buildings, Structures and Grounds	1,778.73	4,502.55	5,627.23	1,676.47	6,329.26
Walnut Orchard:					
Administrative & Superintendence					3,857.73-A
Care of Orchard	14,319.72	12,104.60	16,378.64	17,113.10	4,200.26-A
Crop Harvest	8,891.06	8,415.99	11,563.24	15,178.32	9,386.74-
Packing House and Selling Expense		4,895.93	8,665.83	16,592.05	11,415.66
Depreciation					681.50
NET OPERATING EXPENSE	$43,007.06	$ 47,778.54	$ 59,680.40	$ 65,955.76	$ 48,841.85
NET INCOME	$122,540.56	$155,597.11	$ 195,293.12	$ 265,359.70	$ 271,796.51

A - Decrease over prior year due to charging cost on crop year instead of fiscal year basis.

SCHEDULE 11

OPERATING EXPENSES - 1953- 1954

CITY DISTRIBUTION - PUMPING STATION ACCOUNT

	Labor	Use of Equipment	Material & Supplies	Fuel or Power	Contractual Service	Total
STEAM PUMPS						
Central	$ 73,688.09	$ 124.90	$ 945.28	$72,500.14	$ 107.84	$147,366.25
Clarendon Hts.	553.93	9.20	2.70			565.83
	$ 74,242.02	$ 134.10	$ 947.98	$72,500.14	$ 107.84	$147,932.08
ELECTRIC PUMPS						
Alemany	$ 7,524.01	$ 36.50	$ 89.84	$36,417.47	$ 4.64	$ 44,072.46
Bay Bridge - Treasure Is.	306.62	33.40	17.11	8,008.69	48.00	8,413.82
Bernal Hts.	334.90	7.00		142.56		484.46
Fairview	264.96	16.00		251.36		532.32
Forest Hills	710.29	46.60	33.91	8,621.22	65.35	9,477.37
Francisco St.	241.75	27.20	24.78	2,756.46		3,050.19
Lake Honda	237.48	22.40				259.88
Leland Avenue	-0-					-0-
Lincoln Park	389.20	43.00	2.27	402.84	4.64	841.95
Newcomb Ave.	374.70	28.00		4,068.51	27.68	4,498.89
Olmstead & University	241.09	19.20	8.56	496.25		765.10
Palo Alto	407.56	21.10	10.55	26.32		465.53
Potrero Hts.	237.48	3.20		263.96		504.64
Sunset Booster	395.70	4.60				400.30
Hunters Point	-0-					-0-
Twin Peaks	215.40	14.40	14.97	683.05		927.82
General	407.46		502.13		105.39	1,014.98
Sunset Source			1.08			1.08
Mt. Davidson	634.79	47.80	84.20	284.65		1,051.44
Lake Merced			43.26			43.26
	$12,923.39	$370.40	$832.66	$62,423.34	$ 255.70	$ 76,805.49

SCHEDULE NO. 12

OPERATING EXPENSES - 1953-1954

CITY DISTRIBUTION DIVISION

	Labor	Use of Equipment	Material & Supplies	Contractual Service	Paving	Miscellaneous	Total
SOURCE OF SUPPLY:							
Lake Merced	$12,656.47	$ 1,408.70	$ 174.65	$ 130.66	$	$	$ 14,370.48
PURIFICATION:							
College Hill	75.30	18.90	362.56	207.45			664.21
Sunset Reservoir	64.00	6.00	370.99	10.85			451.84
University Mound	269.92	33.50	1,317.45	435.68			2,056.55
Lombard	4.10	.50	28.89	9.47			42.96
Lake Honda			9.85				9.85
Francisco St.			66.05				66.05
Sutro	13.72	.40	51.87	6.05			72.04
Alemany Fluoridation	37.00	10.50	2,363.51	1.20			2,412.21
	$ 464.04	$ 69.80	$ 4,571.17	$ 670.70			$ 5,775.71
TRANSMISSION AND DISTRIBUTION:							
City Transmission Lines	$ 8,970.68	$ 892.95	$ 474.05	$ 258.00	$ 80.95	$ 4.50	$ 10,681.13
City Reservoirs	63,099.70	1,687.35	9,161.66	17,145.48	108.49	174.25	91,376.93
Meter Expense	60,681.62	1,746.24	49,097.18	1,006.93	51,024.75		163,556.72
Street Department Expense	34,046.30	759.90	12.43	68.30			34,886.93
Operation of Corporation Yard	14,054.93	481.50	5,614.95	6,753.58	19.60		26,924.56
Superintendence	84,922.15	1,154.80	207.30	10,084.84			96,369.09
Consumers' Premises Expense	54,176.34	4,653.11	206.61	505.55			59,541.61
Repairs - Distribution Mains	136,332.29	7,714.35	13,512.74	1,072.01	10,926.07	846.00	175,403.46
Repairs - Service Connections	126,656.54	8,761.56	13,188.23	1,272.96	13,986.58	3,961.17	172,827.04
Repairs - Building & Equipment	9,017.71	52.10	1,176.18	15.86			10,261.85
Reconstruct & Relocate Pipe Lines	18,169.78	1,017.05	5,072.80	555.94		21,566.96	46,382.53
TOTAL CITY DISTRIBUTION DIVISION	$610,128.04	$ 28,920.91	$ 107,724.13	$ 38,739.45	$ 76,146.44	$ 26,552.88	$ 888,211.85

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

SCHEDULE NO. 13
OPERATING EXPENSES 1953-54
OUTSIDE SAN FRANCISCO

SOURCE OF SUPPLY	LABOR	USE OF EQUIPMENT	MATERIAL & SUPPLIES	CONTRACTUAL SERVICES	MISCELLANEOUS	TOTAL
SURFACE SOURCES:						
San Andres Reservoir	$ 20,161.31	$ 639.15	$ 3,095.68	$ 471.33	$	$24,367.47
Crystal Springs Reservoir	54,208.31	9,119.79	8,936.29	1,925.69		74,190.08
Pilarcitos Reservoir	29,453.74	2,676.37	4,582.95	401.22		37,114.28
Calaveras Reservoir	19,554.85	646.85	884.57	911.02		21,997.29
TOTAL	$123,378.21	$13,082.16	$17,499.49	$ 3,709.26		$157,669.12
GROUND SOURCES:						
Sunol Filter Beds	$ 15,057.17	$ 134.80	$ 367.46	$ 867.40		$ 16,426.83
Pleasanton Wells	499.50	115.45	14.56	592.20		1,221.71
TOTAL	$ 15,556.67	$ 250.25	$ 382.02	$ 1,459.60		$ 17,648.54
SUPPLY LINES:						
Bay Div'n P/L (Peninsula Div.)	$ 17,816.68	$ 2,690.20	$ 3,757.99	$ 1,300.88	$ 43.84	$ 25,609.59
Stone Dam Aqueduct	4,806.61	981.25	985.56	67.60		6,841.02
Niles-Irvington Pipe Line	1,496.76	140.20	6.01	28.73		1,671.70
Bay Div'n P/L (Alameda Div.)	19,302.19	4,615.98	2,289.54	1,231.95	8.17	27,447.83
Other Supply Line & Aqueducts (Peninsula Div'n)	1,678.26	92.75	1,141.79	26.31		2,939.11
Other Supply Lines (Alameda Div.)	3,632.41	215.45	537.52	30.48	270.17	4,686.03
TOTAL	$ 48,732.91	$ 8,735.83	$ 8,718.41	$ 2,685.95	$ 322.18	$ 69,195.28
GENERAL EXPENSES:						
Peninsula System	$ 90,154.58	$ 3,093.84	$ 3,183.61	$ 3,242.87	$ 62.42	$ 99,737.32
Alameda System	27,994.24	3,114.36	1,213.97	2,653.13	5.00	34,980.70
TOTAL	$118,148.82	$ 6,208.20	$ 4,397.58	$ 5,896.00	$ 67.42	$ 134,718.02
TOTAL SOURCE OF SUPPLY	$305,816.61	$28,276.44	$30,997.50	$ 13,750.81	$ 389.60	$ 379,230.96

SCHEDULE NO. 14

OPERATING EXPENSES - 1953-1954

OUTSIDE OF SAN FRANCISCO

	Labor	Use of Equipment	Material & Supplies	Fuel or Power	Contractual Service	Total
PUMPING STATIONS						
Baden Pump	$ 1,664.51	$ 12.15	$ 6.20	$ 27.96	$ 86.96	$ 1,797.78
Crystal Springs Pump	24,150.96	622.53	454.62	108,914.72	3,631.43	137,774.31
Bay Division Pump				398.22	82.67	480.89
Pleasanton Pump	954.00		9.35	477.90	26.85	1,468.10
Pleasanton Township Water District				2,491.49		2,491.49
Irvington Pump	1,045.72	72.70	57.48	9,708.19		10,884.09
OUTSIDE PUMPING EXPENSES	$27,815.19	$707.43	$ 527.65	$122,018.48	$ 3,827.91	$154,896.66
PURIFICATION						
San Andres Reservoir	$ 1,856.67	$169.00	$ 4,647.70	$	$ 1,299.47	$ 7,972.84
Crystal Springs Reservoir	1,700.83	274.35	6,044.83		141.93	8,161.94
Calaveras Reservoir	429.25	340.35	6,623.66		390.32	7,783.58
Sunol Purification Station	176.28	6.60	250.05		20.83	453.76
Other Outside Stations	1,541.24	808.76	267.03		342.43	2,959.46
Coast Range Division - H. H. P.	674.75	1,655.81	21,459.17		2,064.49	25,854.22
Lime Treatment Plant			14,204.58		1,077.86	15,282.44
No. San Andres Fluoridation Sta.	82.84		14,353.60		30.32	14,466.76
Millbrae Laboratory	45,840.84	4,803.14	2,579.58		2,365.94	55,589.50
Lake Merced			222.50		10.85	233.35
OUTSIDE PURIFICATION EXPENSES	$52,302.70	$ 8,058.01	$ 70,652.70		$ 7,744.44	$138,757.85
TRANSMISSION & DISTRIBUTION						
PENINSULA DIVISION:						
ALAMEDA TRANSMISSION LINE	$ 3,539.26	$ 286.30	$ 228.79		$ 98.35	$ 4,152.70
Crystal Springs Aqueduct	12,596.06	553.10	695.36		145.20	13,989.72
Crystal Springs Aqueduct (Old)	7,620.17	753.85	980.51		127.90	9,482.43
Crystal Springs Aqueduct (New)	6,086.05	452.74	384.53		227.40	7,150.72
San Andres Transm.Line #1 to College Hill	4,654.08	153.00	340.94		101.50	5,249.52
San Andres Transm.Line #2 to Lake Honda	4,563.75	154.42	372.30		70.10	5,160.57
San Andres Transm.Line #3 to Merced Manor	2,934.65	53.70	137.91		65.25	3,191.51
Sunset Transmission Line	2,999.40	173.74	182.36		41.30	3,396.80
Palo Alto Pipe Line	151.70	93.15	34.85		3.60	283.30
Meter Expense	11,279.08	1,931.95	4,340.43		224.88	17,776.34
TOTAL PENINSULA DIVISION EXPENSE	$ 56,424.20	$ 4,605.95	$ 7,697.98		$ 1,105.48	$ 69,833.61
ALAMEDA DIVISION:						
NILES Regulating Reservoir	$ 5,730.98	$ 65.65	$ 122.20		$ 161.32	$ 6,080.15
Alameda Supply Line	587.92	231.00	49.52			868.44
Pleasanton Transmission Line		2.85	3.30			6.15
Meter Expense	97.03	28.05			8.85	133.93
TOTAL ALAMEDA DIVISION EXPENSE	$ 6,415.93	$ 327.55	$ 175.02		$ 170.17	$ 7,088.67
TOTAL TRANSMISSION & DISTRIBUTION EXPENSE OUTSIDE SAN FRANCISCO	$ 62,840.13	$ 4,933.50	$ 7,873.00		$ 1,275.65	$ 76,922.28

CHARGES OF NON-PAYING MUNICIPAL ACCOUNTS
FOR THE FISCAL YEARS 1952-1953 and 1953-1954

	1952-53	1953-54	INCREASE	DECREASE
Hydrants	$ 255,162.46	$ 257,263.50	$ 2,101.04	
Auxiliary Fire System	8,251.32#			$ 8,251.32
Fire Boats	472.35	439.96		32.39
Fire Department	16,537.86#	23,733.47	7,195.61	
Police Department	5,189.81	5,279.18	89.37	
Parks & Playgrounds	164,742.78	161,920.68		2,822.10
Golden Gate Park - Proper	49,485.81	41,045.01		8,440.80
Libraries	2,221.36	2,378.21	156.85	
Opera House & War Memorial Bldg.	2,192.58	2,418.66*	226.08	
" " " " " "	789.72	424.93*		364.79
" " " " " "	36.00	18.00*		18.00
Memorial Museum-Station M-G.G.Park-Fulton & 10th Ave	438.84	495.35	56.51	
Curator-Pal.Leg.Honor-Lincoln Pk.Clement & 39th Ave	371.88	255.66		116.22
Aquarium	3,468.72	2,699.76		768.96
Youth Guidance Center	3,355.20	3,526.56	171.36	
Adult Guidance Center	622.30	601.87		20.43
Purchaser of Supplies	1,209.36	1,646.28	436.92	
Exposition Auditorium	1,558.68	1,846.44	287.76	
Retirement Board	190.98	201.14	10.16	
City Planning Commission	147.59	150.70	3.11	
Dept. of Public Works (Public Bldgs.)	72,044.62	70,038.58		2,006.04
" " " " (Street Cleaning)	11,906.39	12,114.44	208.05	
" " " " (Street Work & Sewers)		391.96	391.96	
" " " " (Parked Areas Pub.Sts.)	7,187.86	6,612.18		575.68
County Jail	28,256.85	23,644.19		4,612.66
Dept. of Electricity-General Alarm Station	170.33	197.88	27.55	
Dept. of Public Health	23,375.77	24,706.73	1,330.96	
" " " "	1,491.65	1,495.45	3.80	
Relief Home	17,067.06	17,648.62	581.56	
Hassler Health Farm	7,364.14	7,274.79		89.35
Public Welfare Dept.	317.40	342.61	25.21	
Registrar of Voters	54.81	62.23	7.42	
Municipal Railway	9,592.36	9,794.71	202.35	
" " (Track Repairs)	9.63	4.81		4.82
Municipal Airport	5,175.16	3,619.77		1,555.39
Disaster Council	105.47	76.86		28.61
	$ 700,565.10	$ 684,371.17	$ 13,513,63	$ 29,707.56
		Net Decrease		$ 16,193.93

* 3 Accounts for War Memorial & Opera House combined into one total January 1954

"

CHARGES OF PAYING MUNICIPAL ACCOUNTS FOR THE FISCAL YEARS 1952-1953 and 1953-1954

	1952-1953	1953-1954	INCREASE
SCHOOLS	$ 56,254.51	$ 59,666.35	$ 3,411.84
CHILD CARE CENTERS		346.36*	346.36
TOTALS	$ 56,254.51	$ 60,012.71	$ 3,758.20

* Child Care Centers billed separately from schools starting March 1954.

APPENDIX TO
REPORT OF SAN FRANCISCO WATER DEPARTMENT

Table	Description
1	San Francisco Rainfall
2	Rainfall - Watershed Stations
3	Reservoir Storage
4	Water Drawn from Hetch Hetchy and Auxiliary Sources
5	Source of Water Conveyed Across San Francisco Bay
6	Water Delivered Through Pipe Lines
7	Water Delivered at the Consumer's Meters
8	Average Daily Water Consumption Since 1865
9	Average Daily Consumption by Districts
10	Peak Day Consumption by Districts
11	Meters in Service, San Francisco District
12	Meters in Service, Suburban District
13	Offcial Meter Tests
14	Unit Cost for Meter Maintenance
15	Unit Cost of Meter Installation
16	Unit Cost of Service Connection
17	Street Main Taps and Service Connection Record
18	Comparative Pumping Costs
19	Record of Bad Water Complaints
20	Record of No Water Complaints
21	Record of Poor Supply
22	Pipe Records, City Distribution System
23	Valve Records, City Distribution System
24	Contract Data

TABLE NO. 1

SAN FRANCISCO RAINFALL

(U. S. Weather Bureau Records)

Month	Season 1950-51 inches	Season 1951-52 inches	Season 1952-53 inches	Season 1953-54 inches	Normal 1953-54 inches
July	0	.01	0	T.	.01
August	0	.43	.01	.07	.01
September	0	.08	0	T.	.13
October	2.72	.81	.07	.34	1.07
November	4.96	3.33	2.42	1.88	2.27
December	6.01	7.92	9.06	0.82	4.07
January	4.41	10.69	3.26	3.11	4.03
February	3.00	2.62	0.04	2.42	3.91
March	1.32	4.90	1.83	4.56	2.78
April	.89	1.08	3.42	0.82	1.49
May	.65	0.30	0.38	0.11	0.59
June	.04	0.39	0.61	0.14	0.15
Totals	24.00	32.56	21.10	14.27	20.51

1953-54 Season 69.6% of normal

TABLE NO. 2

RAINFALL - WATERSHED STATIONS
(Water Department Records)

Station	Season 1950-51 inches	Season 1951-52 inches	Season 1952-53 inches	Season 1953-54 inches	Normal 1953-54 inches
San Francisco	24.00	32.56	21.10	14.27	20.51
Pilarcitos	54.11	60.07	42.33	34.48	45.40
San Andres	35.33	46.09	30.47	24.41	37.31
Crystal Springs Upper	30.64	40.04	24.51	20.28	32.06
Crystal Springs Lower	31.61	39.16	25.20	18.67	27.66
Crystal Springs Cottage	31.78	44.82	25.60	20.82	27.08
Lake Merced	24.51	32.75	22.45	17.86	21.53
Pleasanton	23.25	28.26	17.17	11.66	20.99
Calaveras	30.07	32.85	21.15	17.09	24.07
Sunol	23.96	29.41	17.39	15.02	20.49
Niles	20.86	25.07	15.61	12.53	19.64
Hetch Hetchy	49.54	47.67	31.71	32.83	34.24
Lake Eleanor	58.63	59.67	37.02	42.29	41.85
Moccasin	33.01	40.39	22.81	26.14	26.76

TABLE NO. 3

RESERVOIR STORAGE
(Exclusive of Hetch Hetchy Sources)

MILLION GALLONS

	1950-51		1951-52		1952-53		1953-54	
	Max. Apr. 7	Min. Nov.15	Max. Jan.26	Min. Nov.30	Max. July 1	Min. Dec.1	Max. July 1	Min. Feb.11
Calaveras	29,576	3,840	32,492	22,488	30,621	21,354	26,042	19,569
Crystal Springs	20,012	9,745	19,660	12,133	20,768	14,388	18,295	14,953
San Andres	5,174	5,248	6,293	6,064	4,493	4,391	5,911	4,394
Pitarcitos	885	570	983	497	757	476	800	546
Lake Merced	2,376	2,218	2,588	2,311	2,163	2,179	2,174	2,281
City Reservoirs	277	261	272	242	275	283	277	260
TOTALS	58,300	21,882	62,288	43,735	59,077	43,071	53,499	42,003

277 260
53,222 41,743
47,482 average

TABLE NO. 4

WATER DRAWN FROM HETCH HETCHY AND AUXILIARY SOURCES

MILLION GALLONS

	1950-51	1951-52	1952-53	1953-54
Hetch Hetchy Supply	28,236	21,672	21,632	32,878
Pleasanton Wells and Sunol Filters	1,066* = 2.92 mgd	1,338 = 3.66 mgd	1,008 = 2.76 mgd	123 = 0.337 mgd ≈ 2.42 mgd average.
Sunset Wells	0*	0	0	0
	29,302	23,010	22,640	33,001

* No water was received from Pleasanton Wells subsequent to April 1949

TABLE NO. 5

SOURCE OF WATER CONVEYED ACROSS SAN FRANCISCO BAY
YEARLY AVERAGE, MILLION GALLONS DAILY

	1950-51	1951-52	1952-53	1953-54	Av.
Pleasanton Wells and Sunol Filters (From Sunol Only)	2.9	3.7	2.7	0.3	= 2.42 mgd
Calaveras Reservoir	14.1	18.6	38.0	21.6	= 22.57 mgd
Hetch Hetchy Water Supply	77.2	59.0	59.2	89.9	
Totals	94.2	81.3	99.9	111.8	

TABLE NO. 6

WATER DELIVERED THROUGH PIPE LINES

Water Transported into San Francisco Consumption Area (1953-54)

San Andres 54" Pipe Line	33.7 M.G.D.
College Hill 30" Supply Line	7.7 " " "
Baden-Merced Branch 30" P/L	8.1 " "
Crystal Springs 44" P/L	10.3 " " "
" " 60" "	29.0 " " "
Sunset Supply 60" P/L	0.9 " " "
Total San Francisco Consumption Area	89.7 M.G.D.

Water Transported from Crystal Springs to San Andres Reservoir:

Crystal Springs Pump Aqueduct	34.9 M.G.D.

Water Transported across San Francisco Bay:

Bay Division 60" and 66" P/L	59.3 M.G.D.
Alameda 36" P/L	0.0 " " "
Bay Division P/L No. 3	52.5 " " "
Total	111.8 M.G.D.

TABLE NO. 7

WATER DELIVERED AT THE CONSUMERS METERS SAN FRANCISCO DISTRICT

	1950-51	1951-52	1952-53	1953-54
Average Active Accounts	145,302	146,844	148,253	149,647.
Number on June 30	146,326	147,362	149,145	150,149. s
Metered Delivery (M.C.F.)				
Residential	1,318.7	1,308.2	1,344.0	1,374.1
Com'l & Ind'l	1,892.1	1,903.3	1,940.1	1,955.2
Municipal - Actual	18.6	17.3	19.3	20.1
Municipal - Comparisons	189.2	194.4	238.5	223.8
Total (M.C.F.)	3,418.6	3,423.2	3,541.9	3,573.2
Average (M.G.D.)	70.2	70.3	72.8	73.4 = 67% of Total

89.7 mgd delivered
16.3 " unaccounted for

SUBURBAN DISTRICT

	1950-51	1951-52	1952-53	1953-54
Average Active Accounts	778	756	759	751
Number on June 30	755	758	760	743
Meter Delivery (M.C.F.)				
Regular Rates	1,329.0	1,395.0	1,585.0	1,750.0
Contract Rates	39.2	36.7	*	*
Free Deliveries (Rip.Contract)	27.0	29.1	*	*
Total (M.C.F.)	1,395.0	1,460.8	1,585.0	1,750.0
Average (M.G.D.)	28.6	30.0	32.6	36.0 = 33% of Total

TOTAL SYSTEM

Metered Delivery (M.C.F.)	4,813.8	4,884.0	5,126.9	5,323.2
Average (M.G.D.)	98.8	100.3	105.4	109.4

*Effective July 1952, all accounts billed in accordance with rate schedule.

TABLE NO. 8

AVERAGE DAILY CONSUMPTION SINCE 1865
CONSUMPTION IN MILLION GALLONS PER DAY

Venturi Meter Records

YEAR	M.G.D.	YEAR	M.G.D.	YEAR	M.G.D.	YEAR	M.G.D.
1865	2.4	1885	17.0	1905	34.9	1925	42.6
1870	6.0	1890	20.4	1910	35.6	1928	50.1
1875	11.7	1895	19.9	1915	42.6	1929	52.1
1880	12.7	1900	25.5	1920	36.2	1930	52.1

Note: At noon on March 3, 1930 the San Francisco Water Department acquired title to the operative properties of the Spring Valley Water Company

Year	San Francisco	Sub-urban	Total System	Max. Day	Min. Day	Max. Month	Min. Month
1930-31	49.2	3.1	52.3	66.7	41.3	57.8	47.0
1931-32	49.3	2.8	52.1	65.6	39.6	59.4	47.5
1932-33	46.4	2.7	49.1	60.4	39.9	54.3	44.6
1933-34	47.3	2.6	49.9	64.3	39.1	53.7	45.1
1934-35	48.1	2.4	50.5	65.4	41.3	58.1	46.2
1935-36	52.3	2.5	54.8	68.0	43.0	62.1	50.3
1936-37	55.1	3.4	58.5	70.7	45.7	63.8	51.8
1937-38	53.3	5.0	58.3	72.4	46.7	65.4	53.4
1938-39	56.2	6.4	62.6	84.6	48.5	77.5	54.8
1939-40	59.6	9.0	68.6	89.5	51.6	76.6	60.9
1940-41	60.7	7.3	68.0	90.0	52.0	77.9	60.6
1941-42	63.5	7.7	71.2	94.5	53.1	85.7	61.7
1942-43	69.2	8.6	77.8	106.9	60.2	92.3	68.6
1943-44	76.1	11.4	87.5	109.9	70.4	101.1	76.8
1944-45	79.0	17.9	96.9	134.9	74.7	116.5	85.2
1945-46	83.7	17.2	100.9	131.9	72.9	115.3	88.0
1946-47	83.3	18.6	101.9	135.6	76.5	117.0	86.2
1947-48	81.3	19.7	101.0	138.3	74.2	122.6	88.0
1948-49	83.3	19.9	103.2	138.3	73.3	124.4	86.4
1949-50	83.1	19.6	102.7	139.1	73.8	120.7	88.0
1950-51	82.8	23.0	105.8	147.7	77.3	126.1	88.6
1951-52	82.9	26.2	109.1	154.0	77.6	130.8	92.1
1952-53	88.5	29.9	118.4	166.8	83.7	140.2	99.4
1953-54	89.7	35.2	124.9	197.0	88.0	157.3	107.2

NOTE: Water Department deliveries for consumption in the major inhabited portion of the northerly 47 square miles of San Mateo County are included in the figures in column headed "San Francisco" and are not included in the figures in column headed "Suburban" in Table No. 8.

1963-69 100. 78 178.

See page 101 and 36 ...

TABLE NO. 9

AGERAGE DAILY CONSUMPTION BY DISTRICTS

District	GALLONS 1953-54	1952-53	Increase or Decrease	% Incr. or Decr..
Forest Hill	755,616	727,230	+28,386	+ 3.9
Stanford Heights	12,121,822	11,808,647	+313,175	+ 2.7
Sunset-Lake Honda	35,306,912	34,321,099	+985,813	+ 2.9
College Hill	9,183,474	8,999,584	+183,890	+ 2.0
University Mound	30,723,154	30,513,293	+209,861	+ 0.7
*Merced Manor	1,621,997	2,113,805	-491,808	-23.3
Total City	89,712,975	88,483,658	+1,229,317	+1.4
Suburban	35,233,348	29,945,690	+5,287,658	+17.7
Total Entire System	124,946,323	118,429,348	+6,516,975	+5.5

*Merced Manor consumption not measured directly: Any inaccuracies would reflect in suburban and College Hill consumption.

TABLE NO. 10

PEAK DAY CONSUMPTION BY DISTRICTS

District	1953-54	1952-53	1951-52
Forest Hill	1,327,000	1,281,000	1,190,000
Stanford Heights	15,673,000	15,034,000	14,443,000
Sunset-Lake Honda	50,560,000	46,625,000	43,915,000
College Hill	11,983,000	11,423,000	12,428,000
University Mound	41,916,000	42,196,000	37,783,000
Merced Manor	3,254,000	2,950,000	2,644,000
Total City	116,346,000	113,497,000	106,301,000
Suburban	80,647,000	53,682,000	47,718,000
Total System	196,993,000	166,770,000	154,019,000

TABLE NO. 11

METERS IN SERVICE - SAN FRANCISCO
AS OF JUNE 30, 1954

CLASS OF CONSUMER	5/8"	3/4"	1"	1½"	2"	3"	4"	6"	8"	12"	Total
REVENUE PRODUCING											
Commercial	20,821	1,020	2,093	2,301	3,641	8	50	266	282	1	30,483
Residential	119,441	346	995	267	10						121,059
Docks & Ships	141	9	32	50	96	1		1	1	2	333
Total	140,403	1,375	3,120	2,618	3,747	9	50	267	283	3	151,875
NON-REVENUE PRODUCING											
Commercial	1,338	18	33	10	24	1	2	5	2		1,433
Residential	852	2	5								859
Dock and Ship				1	6				2		9
Total	2,190	20	38	11	30	1	2	5	4		2,301
TOTAL METERS INSTALLED	142,593	1,395	3,158	2,629	3,777	10	52	272	287	3	154,176

Total Meters in Service as of June 30, 1954			154,176
Less: Extra Meters in 879 Batteries - (2,532 meters-879)		1,653	
Extra Meters in 40 consolidations (113 " - 40)		73	
Non-Revenue Meters (Temporarily shut off)		2,301	4,027
Number of Active Accounts as of June 30, 1954			150,149

NOTE: The above meter count includes 551 Automatic Sprinklers for fire purposes. At Dock and Shipping Office Portable meters used on hydrants as needed (not included in above) 11-1½"; 35-2" Lamberts. At Union Plant of Bethlehem Shipbuilding Corp., 11-1½" Lamberts.

PREVIOUS RECORDS:	1949-50	1950-51	1951-52	1952-53	1953-54
Total Meters	147,704	149,802	151,132	153,015	154,176
Increase	1,925	2,098	1,330	1,883	1,161
Idle Meters	1,916	1,920	2,166	2,169	2,301

TABLE NO. 12

METERS IN SERVICE - SUBURBAN DISTRICT

CLASS OF CONSUMERS	5/8"	3/4"	1"	1½"	2"	4"	6"	8"	10"	Totals
REVENUE AND NON-REVENUE PRODUCING AS OF JUNE 30, 1954										
REVENUE PRODUCING										
Under Regular Rates	503	22	46	28	299	17	78	31	2	1,026
NON-PRODUCING										
Under Regular Rates S/O Shut Off	5				5					10
S.F. Intern'l. Airport	10		1	7	13			6		37
TOTALS	518	22	47	35	317	17	78	37	2	1,073

Total Meters in service as of June 30, 1954 — 1,073

Less: Meters in excess of accounts - 283

Non-Revenue Producing Meters - 47 — 330

Number of Active Suburban Accounts June 30, 1954 — 743

Note: The above includes 3 automatic sprinklers for fire purposes

COMPARISON RECORD	5/8"	3/4"	1"	1½"	2"	4"	6"	8"	10"	Totals
Record June 30, 1951										
Revenue Producing	515	26	53	34	328	16	49	26	3	1,050
Non-Producing	15	3	2		3			2		25
Total	530	29	55	34	331	16	49	28	3	1,075
Record June 30, 1952										
Revenue Producing	517	24	49	37	295	14	64	24	3	1,027
Non-Producing	19	1								20
Total	536	25	49	37	295	14	64	24	3	1,047
Record June 30, 1953										
Revenue Producing	523	20	50	34	308	16	71	31	2	1,055
Non-Producing	13	1	1	1	9					25
Total	536	21	51	35	317	16	71	31	2	1,080

TABLE NO. 13
OFFICIAL METER TESTS

During Fiscal Year Ending June 30, 1954

PERCENTAGE OF VARIATION

Number Tested

	0%	2%	5%	1%	1.5%	2%	2.5%	3%	4%	5%	6%	Total	Ratio
Fast				1	2		1	1				5	26.3%
Slow		2	2	3		1						8	42.1%
O.K.	6											6	31.6%
Total	6	2	2	4	2	1	1	1				19	100.0%

PREVIOUS TOTALS

Year													
	1950	4			18		8	1	5		1		37
	1951	9			3		2	1					16
	1952	6		4	2	3	3		1	1		1	21
	1953	4		1	5	1	1						12

Refunds 1953-54 Account of over-registration - $2.40
Increases " " " " under-registration -0-

TABLE NO. 14

UNIT COST FOR METER MAINTENANCE

Year	Meters in use	Total Cost	Cost per Meter	Labor Cost per Meter	Other Cost per Meter
1950-51	149,802	$ 140,032.95	0.93	0.365	0.570
1951-52	151,132	107,952.22	0.71	0.323	0.391
1952-53	153,015	98,561.61	0.64	0.349	0.295
1953-54	154,176	163,556.72	1.06	0.394	0.667

TABLE NO. 15

UNIT COST OF METER INSTALLATION

	1950-51	1951-52	1952-53	1953-54
Meters Set	3,078	2,050	1,959	1,851
Percent ¾" and smaller	85.3	77.6	78.9	77.0
Labor	$3.20	$4.39	$6.01	$ 4.41
Supervision	0.13	0.26	0.30	0.61
Meter	22.83	29.76	35.82	30.40
Material	3.51	5.88	9.55	4.66
Equipment	0.17	0.27	0.45	0.22
Paving	0.47	0.83	1.44	1.35
Miscellaneous	0.15	0.01	1.00	0.16
	$30.46	$41.40	$ 54.57	$ 41.81

TABLE NO. 16

UNIT COST OF SERVICE CONNECTIONS

	1950-51	1951-52	1952-53	1953-54
Services installed	2,357	1,996	2,745	2,833
Percent ¾" installed	81.7	77.8	77.4	69.6
Labor	$ 26.79	$36.37	$29.94	$ 31.75
Supervision	1.06	1.40	1.24	3.65
Material	10.37	13.31	14.04	15.01
Equipment	3.18	4.06	3.29	3.32
Paving	10.06	10.79	10.38	9.05
Miscellaneous	0.24	0.76	5.10	0.67
	$51.70	$66.69	$ 63.99	$ 63.45

TABLE NO. 17

STREET MAIN TAPS AND SERVICE CONNECTIONS RECORD

San Francisco District — June 30, 1954

TAPS ON STREET MAINS

	Wharf	3/4"	1"	1½"	2"	3"	4"	6"	8"	12"	16"	TOTALS
June 30, 1953	294	160,004	5,051	3,510	2,505	775	424	379	299	16	2	173,259
ADD 1953-54	-	422	515	86	50	13	16	24	8	-	-	1,134
June 30, 1954	294	160,426	5,566	3,596	2,555	788	440	403	307	16	2	174,393

SERVICE CONNECTIONS

	Services connected to street mains, as above	174,393
ADD	"Distributors", being one or more add'l meters con. to service pipes	14,390
	TOTAL connections of record.	188,783
DEDUCT	Disconnected services	36,333
	Net metered live services consisting of 151,875 active meters; less 1,726 extra meters in batteries, plus 2,301 services tempy S/O.	152,450

Previous Records:	1950-51	1951-52	1952-53
Active	147,882	148,966	150,846
Shut-Off	1,920	2,166	2,169
TOTALS	149,802	151,132	153,015
Less extra battery meters	1,556	1,604	1,701
NET	148,246	149,528	151,314

SERVICE INSTALLATIONS

Fiscal Year 1953-54

DISTRICT	Taps	Distributors	Totals
Richmond District	39	10	49
Sunset "	256	94	350
No.Mkt. & West. Add.	203	62	265
So.Mkt. & Tw.Pks.	634	110	744
TOTALS	1,132	276	1,408
Previous Years			
1950-51	1,983	418	2,401
1951-52	1,418	220	1,638
1952-53	1,380	271	1,651

AUTOMATIC SPRINKLER INSTALLATIONS

Oct. 26, 1932 to June 30, 1954

SIZE	1932-51	1951-52	1952-53	1953-54	Total	Installed prior to 10/26/32	GRAND TOTAL
4-inch	21	4	3	4	32		
6-inch	129	13	9	18	169		
8-inch	169	21	14	7	211		
12-inch	8	0	1	0	9	163	
TOTALS	327	38	27	29	421	163	584

SF1

TABLE NO. 18

COMPARATIVE PUMPING COSTS

SAN ANDRES PUMP	1950-51	1951-52	1952-53	1953-54
Water Pumped, Gallons	12,669,413,000	9,317,043,000	13,979,387,000	12,742,790,000
Electric Power, KWH	11,264,000	9,536,000	14,022,400	12,876,800
Power Cost	$ 88,923.95	$ 83,289.64	$ 113,537.06	$ 108,914.72
Labor Cost	18,034.70	22,259.49	22,522.58	22,537.93
Miscellaneous	2,705.04	2,399.66	2,565.20	1,564.98
Totals	$ 109,663.69	$ 107,948.79	$ 138,624.84	$ 133,017.63
Cost per Million Gallons	10.28	11.59	9.92	10.44
" " " "per ft.of lift	0.0417	0.0523	0.0450	0.0474
CENTRAL PUMP				
Water Pumped, Gallons	4,052,250,000	4,040,430,000	4,285,260,000	4,388,500,000
Gas burned, Cu.Ft.	172,978,000	170,964,000	191,048,000	193,304,000
Oil burned, Gallons	6,182	8,430	None	None
Electric Power, KWH	12,000	31,200	153,600	141,600
Fuel & Power Cost	$48,382.66	$ 55,325.34	$ 65,823.57	$ 67,418.97
Labor Cost	52,625.62	62,039.80	60,395.22	68,296.27
Miscellaneous	988.20	463.00	1,075.08	159.02
Totals	$ 101,996.48	$ 117,828.14	$ 127,293.87	$ 135,874.26
Cost per million gallons	$ 25.17	$ 29.16	$ 29.71	$ 30.96

Value of water @ 15¢/100 cf = $2.00 per million gallons.
= $.67 per acre foot.

TABLE NO. 19
RECORD OF BAD WATER COMPLAINTS

Comparisons of complaints received during Fiscal Years 1950-51 to 1953-54 with reference to the districts involved

	1950-51	1951-52	1952-53	1953-54
University Mound	51	49	19	32
Sunset Reservoir	146	173	116	133
College Hill	53	27	28	29
Sunset Lombard	1	0	0	3
Forest Hill	4	7	4	2
Stanford Heights	74	73	57	40
Presidio Heights	7	23	7	1
Merced Manor	9	26	11	7
Totals	345	378	242	247
		+33	-136	+5

overall net February -98

TABLE NO. 20
RECORD OF NO WATER COMPLAINTS
Fiscal Years 1950-51 to 1953-54

(a) Those for which the Department was responsible:

Choked Pipes	90	37	98	54
Service or main broken	27	34	34	30
Serv. or main too small	134	494	*	*
Elevation too high	69	3	*	*
S/O at main or meter	12	8	12	30
District tempy S/D	0	0	3	33
Totals	332	576	147	147
Percentages	33.1%	45.2%	32.4%	26.8%

(b) Those for which the Consumers were responsible:

House Valves closed	92	61	56	73
House Pipe too small	357	304	*	*
False Reports	186	242	172	213
Valves out of Order	91	76	67	98
House Pipe Broken	6	9	8	17
Overloaded service	36	6	*	*
Totals	768	698	303	401
Percentage	66.9%	54.8%	67.3%	73.2%
Total "No Water"	1,100	1,274	450	548
Large Bill Complaints	9,555	9,265	8,859	9,286

*These complaints included in Poor Supply (Table No. 21)

TABLE NO. 21

COMPLAINTS - POOR SUPPLY

	1952-53	1953-54
Meter Only:		
Too small	13	15
Service Only:		
Adequate	148	84
Inadequate	597	599
Meter and Service:		
Too small	122	165
Housepiping:		
Note: (Includes valve unless valve only is involved)		
Adequate	13	3
Inadequate	749	788
Valves Only:		
Adequate	--	--
Inadequate	122	71
	909	918
% Inadequate		
Service	79.3	84.2
Housepipe	82.5	86.0

599
165
764 ← 864 [illegible]
(do pg. 33)

TABLE NO. 22

PIPE RECORDS
CITY DISTRIBUTION SYSTEM

Wrought Iron and Steel Pipe

Size	Total Pipe in Ground July 1, 1953	Pipe Laid 1953-54	Removed or Abandoned 1953-54	Total Pipe in Ground June 30,1954
3/4"	12,073'	0'	0'	12,073'
1"	39,119	0	2,154	36,965
1¼"	3,928	0	0	3,928
1½"	170,082	0	1,332	168,750
2"	273,315	818	11,468	262,665
3"	28,022	0	630	27,392
4"	3,986	0	100	3,886
5"	804	0	0	804
6"	3,809	0	0	3,809
12"	6,555	0	0	6,555
13"	456	0	0	456
16"	25,587	0	0	25,587
20"	65,417	0	0	65,417
22"	25,309	0	0	25,309
23½"	9,087	0	0	9,087
24"	48,092	0	0	48,092
30"	35,753	4,841	0	40,594
33"	2,409	0	0	2,409
36"	48,378	8,486	0	56,864
37½"	8,896	0	0	8,896
44"	22,974	0	0	22,974
48"	11,504	0	0	11,504
60"	26,216	0	0	26,216
Total W.I.&S.	871,771'	14,145'	15,684'	870,232'

Transite Pipe

6"	16,747'	558'	0'	17,305'
8"	23,172	0	0	23,172
Total Transite	39,919'	558'	0'	40,477'

TABLE NO. 22 (Cont'd.)

Cast Iron Pipe

Size	Total Pipe in Ground July 1, 1953	Pipe Laid 1953-54	Removed or Abandoned 1953-54	Total Pipe in Ground June 30,1954
2"	25,075'	111'	300'	24,886'
3"	61,025	154	280	60,899
4"	499,039	1,786	3,290	497,535
6"	1,756,510	10,809	2,010	1,765,309
8"	1,531,832	17,758	1,056	1,548,534
10"	6,348	0	248	6,100
12"	483,158	15,965	288	498,835
16"	300,900	1,780	310	302,370
20"	22,642	0	0	22,642
22"	19,058	0	0	19,058
24"	52,173	0	0	52,173
30"	5,297	0	0	5,297
Total C.I.	4,763,057'	48,363'	7,782'	4,803,638'
Total All	5,674,747'	63,066'	23,466'	5,714,347'
Miles	1,074.762	11.944	4.444	1,082.262

Note:

From January, 1952 to June 30, 1953 the 2" galvanized abandoned pipe has erroneously been added to the 2" cast iron abandoned pipe column. Changes have been made to clear the 2" cast iron abandoned pipe column and added to the 2" galvanized or wrought iron abandoned pipe column, thus changing the previous totals.

TABLE NO. 23

VALVE RECORDS
CITY DISTRIBUTION SYSTEM

Gates		Service Gates		Blowoffs		Air Valves		Check Valves	
2"	129	3"	456	3/4"	9	3/4"	57	1½"	7
3"	244	4"	482	1"	45	1"	99	2"	10
4"	1253	6"	319	1½"	282	1½"	409	3"	1
6"	4014	8"	263	2"	881	2"	274	4"	9
8"	3767	12"	12	3"	220	3"	5	6"	27
10"	6			4	435	4"	1	8"	29
12"	855			6"	188	6"	13	12"	3
16"	453			8"	125	8"	278	16"	3
20"	23			12"	20				
22"	20			16"	3				
24"	62								
30"	23								
36"	20								
37½"	2								
42"	3								
48"	1								
Totals	10875		1532		2208		1136		89

Stop Cocks	
5/8"	18
3/4"	141
1"	200
1½"	980
2"	2720
Total	4059

TABLE NO. 24
CONTRACT DATA 1953-54

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Complete 6-30-54	Bid Price	Contract Cost to 6-30-54
578	60" Sunset Supply Line Burlingame - Millbrae	Peninsula	9	M & K Corp.	3-9-53	4-16-54	100	$ 935,912.00	1,141,615.70
588	Construction of Lake Merced Pumping Station	CDD	6	Rothchild,Raffin & Weirick & Pac. Bridge, Jt.Vent.	12-10-51	11-13-53	100	1,064,570.00	1,158,172.54
607A	Lay 8" CIM & Install Pump Equip.Mt.Davidson Area	CDD	7	SFWD	10-20-52	9-8-53	100	25,809.50	17,684.67
610	Const. Alameda Creek Siphon No. 2	Alameda	10	Stolte,Inc.	2-24-53	12-31-53	100	378,826.00	510,243.79
637	Reroofing Stanford Heights Reservoir	CDD	3	Western Roofing	11-23-53	2-5-54	100	12,280.00	12,166.49
641	Lay 30" Steel Main Broadway & Montgomery to Columbus Ave. & Bay St.	CDD	7	Western Pbg. & Heating & W. Leinkeit,Jt. Venture	3-9-53	12-2-53	100	167,691.00	148,516.89
642	Lay 12" CIM in Key Ave. and across Freeway from 3rd to San Bruno Ave.	CDD	7	Coast P/L Cont.	4-20-53	8-25-53	100	17,248.00	16,427.36
644	6",8" & 16" CIM in Junipero Serra Blvd., Santa Anna Ave. & in Kirkham Street	CDD	4	F.T.Fairey	4-20-53	7-13-53	100	16,100.55	15,435.61
647	60" Sunset Supply Line,Millbrae to Baden	Peninsula	7	Peter Sorensen	5-4-53	5-5-54	100	887,674.00	920,782.60
649	6" & 8" CIM in Kieth St., LeConte Ave.& Bayshore Blvd.	CDD	6	Coast P/L Cont.	4-20-53	8-17-53	100	13,395.00	11,474.29
650	6" & 8" CIM in Lawton Heights	CDD	6	Coast P/L Cont.	6-1-53	8-27-53	100	$ 4,664.20	$ 4,077.23
652	6" & 8" CIM in Corwin & Douglas	CDD	6	E. J. Treacy	5-4-53	8-5-53	100	6,854.00	6,296.55
653	36" Steel Transmission Main from Lake Merced Pump Sta. to 23rd and Sloat Blvd.	CDD	4	Coast Pipeline Cont. and Ralph O. Dixson	6-1-53	1-27-54	100	217,804.00	213,975.92
654	6" & 8" CIM in Westwood Park Area	CDD	6	Michael Murphy,Jr.	5-25-53	9-11-53	100	18,365.80	17,610.47
655	Repaving of street and sidewalk openings 1953-54	CDD	1	Pacific Pavements	5-25-53	6-30-54	100	112,395.00	121,386.17

TABLE NO. 24 (Continued)
CONTRACT DATA 1953-54

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Complete 6-30-54	Bid Price	Contract * Cost to 6-30-54
656	6" Transite & 8" CIM in Southern portion of Lakeshore Country Club Acres	CDD	7	Fred T. Fairey	6-15-53	7-27-53	100	23,689.90	21,480.90
657	8"CIM in Kirkham St. and in 17th Ave.	CDD	5	Michael Murphy, Jr.	6-15-53	9-28-53	100	9,175.50	8,102.35
658	6" CIM in Charter Oak Ave. Industrial to Helena St.	CDD	6	H.T.Treacy	6-1-53	7-10-53	100	3,257.20	2,944.82
659	Roofing & Fencing Wilde Ave. Reservoir	CDD	3	Western Roofing	2-8-54	4-20-54	100	4,162.00	4,013.00
660	Construction of Summit Pump Station	CDD	8	C. J. Collins Co.	5-3-54	---	10	31,154.00	3,000.00
661R	6" & 8" CIM in Thrift, Faxon, Baker, Hyde & Green Sts. (Sutro Project)	CDD	5	Fred T. Fairey	8-31-53	11-11-53	100	$ 20,909.50	$ 19,283.60
662	6",8" & 12" CIM in Skyline Blvd. Lakeshore Dr. to Ft. Funston	CDD	7	E. J. Treacy	7-20-53	9-15-53	100	9,709.30	8,616.01
663	12"& 16" CIM in 34th Ave.-Ulloa to Judah & in Judah -34th to 29th Ave.	CDD	11	Lowrie Paving Co.	12-21-53	3-29-54	100	89,701.85	88,198.33
664	Construction of Summit Reservoir	CDD	6	Monson Bros.	9-21-53	---	18	576,697.00	103,000.00
665	Installation of Conveyors & Elevators in the Walnut Dehydrator Building	Alameda	2	R.L.Logan	8-17 53	10-13-53	100	11,660.00	12,832.78
666	Replacement of Crystal Springs 44" Pipeline Crystal Springs Dam to Hillsborough Bridge	Peninsula	8	McGuire & Hester	3-15-54	----	16	571,144.00	91,000.00
667	For the gathering and delivering of the Walnut Crop on the Sunol Walnut Orchard	Alameda	2	John Helzer	8-31-53	11-23-53	100	10,400.00	7,455.41
668	30" Steel Mains in 20th Ave. Kirkham St. to Golden Gate Park	CDD	7	M & K Corp.	3-29-54	----	65	61,462.50	40,000.00
669	4",8" & 12" CIM in Grand View Terrace, Clementina and Army St.	CDD	6	Fred T. Fairey	11-2-53	12-28-53	100	10,857.15	9,550.63

TABLE NO. 24 (Continued)
CONTRACT DATA 1953-54

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Complete 6-30-54	Bid Price	Contract* Cost to 6-30-54
670	12" CIM in Ocean & Onondaga from Phelan to Mission	CDD	7	Fred T. Fairey	4-12-54	6-18-54	100	$ 42,665.45	$ 35,400.00
671	Replace Trestle Bents-Niles-Irvington Pipeline	Alameda	10	Chas. S. Moore	6-14-54	---	3	18,870.00	600.00
673	Dike Bay Division Pipe Right of Way	Peninsula	1	Associated Dredging Co.	6-1-54	---	2	15,937.00	300.00
674	6",8"& 12" CIM in Golden Gate Heights	CDD	9	Fred T. Fairey	1-25-54	3-24-54	100	23,492.00	23,445.24
675	6"& 8" CIM in Alemany Blvd. and Restani Way	CDD	5	Fred T. Fairey	1-4-54	2-24-54	100	3,543.90	2,891.74
676	6" CIM in Greenwich, Jones to Taylor and Goettingen St. Ward to Ordway	CDD	7	Pat Barkley	2-15-54	4-30-54	100	8,347.50	10,420.66
677	6",8" & 12" CIM in Midtown Terrace #2	CDD	7	H. T. Treacy	3-1-54	4-27-54	100	16,821.80	13,770.87
678	Reroofing buildings at SFWD Bryant St. Yard	CDD	8	Leon Carlen	3-1-54	4-13-54	100	5,135.50	5,042.57
679	4",6" CIM in La Salle, Moscow and Silliman	CDD	6	E. J. Treacy	4-12-54	6-8-54	100	6,704.25	6,628.26
681	8" CIM in the Utility Easement crossing Bayshore Freeway-McKinley and Gillette Ave.	CDD	4	Fred. T. Fairey	5-3-54	6-30-54	100	4,969.50	4,659.39**
682	4",6" & 8" CIM in Putman-Jarboe to Tompkins & in Freeway Acces Rd. Vermont to Kansas	CDD	4	Fred T. Fairey	5-24-54	----	25	$ 7,420.70	$ 1,900.00
683	4",6" & 8" CIM in Potrero Annex Housing Project	CDD	5	Fred T. Fairey	6-14-54	----	0	13,102.10	0
685	Alterations, 1st, 2nd and 3rd floors, 425 Mason St.	General	7	Wm. Mc Intosh & Son	6-1-54	----	0	5,851.00	0
690	Painting 1st & 2nd floors, 425 Mason St.	General		New Method Painting & Decorating Co.	6-14-54	----	0	2,975.00	0

** Incomplete

* Contract cost includes cost of materials and equipment furnished by the City.

ORGANIZATION AND PERSONNEL

G. W. Pracy . . . . . General Manager and Chief Engineer

WATER PRODUCTION AND ENGINEERING

T. W. Espy ** . Senior Engineer in Charge of Water Production
C. A. Lauenstein . Construction Engineer - Special Construction
W. A. Yount . . . . . Superintendent Alameda Division
W. R. Anderson *** . Assistant Superintendent Alameda Division
G. J. Davis . . . . . Superintendent Peninsula Division
J. E. O'Marie . . . Assistant Superintendent Peninsula Division
G. E. Fanning . . . . . Photographer

CITY DISTRIBUTION

O. G. Goldman . . . . . Superintendent City Distribution
S. M. Tatarian . . Assistant Superintendent City Distribution
A. G. Zecher . . . . . General Foreman City Pipe System
J. P. Curto . . . . . General Foreman Services and Meters
A. C. Doidge . . . . . Head Clerk
R. W. Tullis . . . . . .Superintendent of Machine Shop
P. L. Sebanc . . . . . Foreman Meter Shop

WATER PURIFICATION

H. C. Medbery * . . . . . Engineer of Water Purification
H. W. Tracy . . . . . Assistant Engineer Water Purification
H. L. Fruitman . . . . . Senior Water Chemist

WATER SALES

J. J. Lyons . . . . . Manager, Water Sales Division
J. W. Cooper . . . . Assistant Manager, Water Sales Division
James Hennessy . . . . . Chief Clerk Collections
Kearce Fahy . . . . . Chief Clerk Consumers' Accounts
E. R. Benninger . . . . . Head Clerk Water Sales Division
C. C. Clark . . . . . Claims Representative
M. C. Simon . . . . . Assistant Claims Representative
Francis Lennon . . . . . Head Clerk Adjusting Division
T. S. Szeghy . . . . . Head Clerk Consumers' Accounts
Chas. Hynes . . . . . Head Clerk Service and Supply
F. B. Peterson . . . . . Head Clerk Closing Bills
J. P. Manning . . . . . Head Clerk Docks and Shipping
Andrew Ute . . . . . Chief Water Service Inspector

LANDS AND AGRICULTURE

J. G. Brucato Superintendent Agricultural Division
Fred Steiner . . Assistant Superintendent Agricultural Division

ACCOUNTS

E. J. White . . . . . Senior Accountant
Z. H. Taylor . . . . . Accountant

* Transferred to Senior Engineer in Charge of Engineering and Water Production, March 5, 1954. H. W. Tracy, Acting.
** Retired November 15, 1953.
***Retired October 1, 1953. Raymond Borome appointed December 17, 1953.

RETIRED 1953-54

During the past fiscal year, the following employees were retired from service, and recognization is given to their faithful service in the organization:

Walter Anderson	Assistant Superintendent, Alameda Division	29 years service
Cecil E. Beatie	Engineer, Mechanical	5 years service
Michael Cook	Laborer	22 years service
Charles Drocco	Serviceman's Assistant	18 years service
T. W. Espy	Senior Engineer Civil	42 years service
Rita Jacobs	General Clerk Stenographer	9 years service
Fred Kernan	Senior Inspector	32 years service
Fritse Langhoff	General Clerk - Typist	28 years service
Frank O'Neil	Serviceman's Assistant	16 years service
William Wankowski	Photostat Operator	38 years service

IN MEMORIAM

John Mc Donnell	December 15, 1953	1 year service
Herbert Neville	December 13, 1953	1 year service